RISING STEM BALL VALVES

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INDUSTRIAL VALVES

PETROCHEMICAL
DIVISION

RISING STEM
BALL VALVES

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REV.3 - JULY 2018

We are pleased to present you our company which, since its foundation more than 25 years ago, is dedicated to the production of high quality valves. Since 1988 we have been manufacturing all kind of valves mainly for petrochemical, energy, gas, marine services and water and we are proud to manufacture our valves under our brand ARFLU.

ARFLU 's quality guarantee system as well as all its processes and procedures, both technical ones regarding products and in the organization of the company are certified according to the UNE-EN ISO 9001 standard. In addition ARFLU is certified according to H module of 97/23/CE of the EU. Though this certification is extremely important for our company, it must be said that the best certification and guaranty we can offer is the fact that our customers are placing their confidence in ARFLU products day by day. Living in a world of technology and communications as it is today, in ARFLU we try to keep at the forefront of industry. ARFLU owns the latest and most powerful informatic technology systems in order to have our whole organization perfectly communicated and to be in constant contact with customers worldwide. ARFLU is one of the most qualified companies in its field. We develop tailor made solutions as well as we provide customized advice and training for our clients.

arflu

INNOVATION, QUALITY, DESIGN

QUALITY:

The complete Arflu team is trained in quality processes to ensure that customers, no matter where they are located, receive consistent and excellent quality in our products and services.

Our valves are characterized by their high quality, guaranteed through testing one by one, each with an individual number for complete traceability.

Our test benches and laboratory facilities are provided with equipment to realize examinations of all kinds like hydrostatic and pneumatic pressure test, thickness verification, fugitive emission test and all types of non-destructive examinations.

THE QUALITY POLICY

ARFLU, S.A. Management has implemented and maintains a system of quality management based on the requirements of the UNE-EN-ISO 9001 (2008) : ``Quality management system Requirements´´ for manufacturing activities of valves for fluid control.

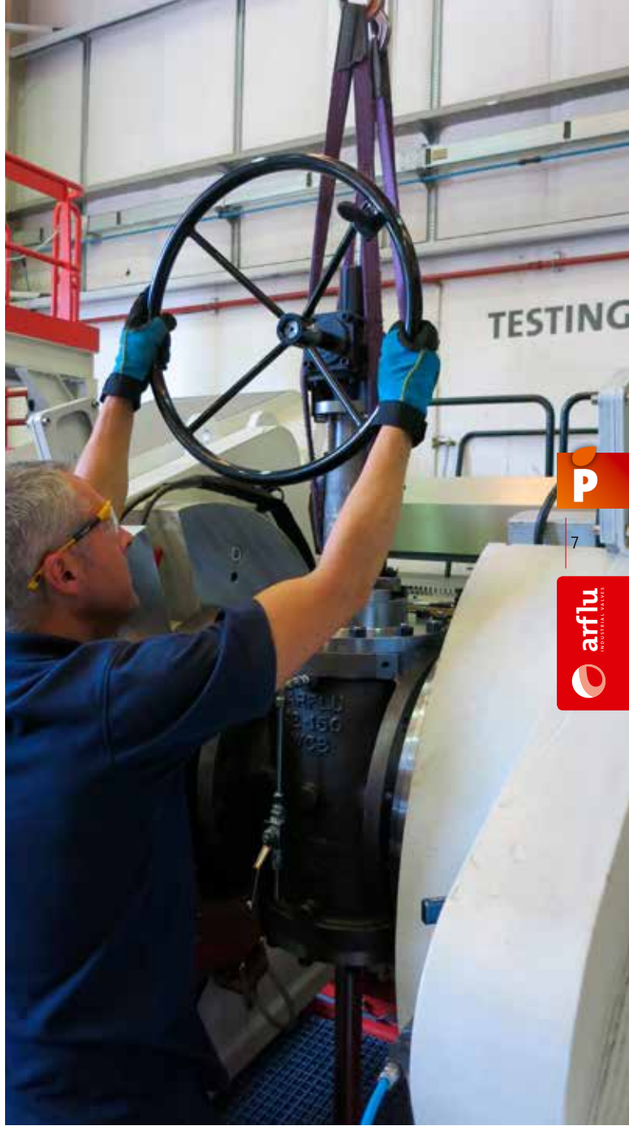
The Quality management system's aim is to achieve Arflu´s customer satisfaction by complying with all requirements, specified by both the client and legal or regulatory requirements as well as the necessary ones to assure the effectiveness of the manufacture.
Therefore ARFLU, S.A. management promises to fulfil the following general targets:

This point is the cornerstone of our company philosophy and a key to our global competitiveness.

- Managing quality of services provided, ac cording to International Standard ISO 9001 (2008).
- Compliance with the requirements agreed with our customers (product specifications, delivery, agreed price, etc.), strengthening their confidence in our organization.
- Compliance with other requirements: legal requirements and implicit requirements to ensure adequacy of services provided to customer needs
- Continuous improvement of the efficiency of quality management.

The Quality Policy is spread to the whole personnel through training seminars and by distribution of controlled copies of the present document. In addition, another controlled copy is placed in the bulletin board of ARFLU, S.A. By this means, ARFLU, S.A ensures that the Quality Policy is understood by the whole personnel of the company.

The review of the Quality Policy, as well as the establishment and review of specific and quantified quality targets, is carried out by the management during system review.



RISING STEM BALL VALVES

GENERAL CONSIDERATIONS:

Arflu RSBV is a valve specially designed for oil and gas industry for services requiring positive action seal to avoid leackage or process contamination. Energized soft or metal seated valves are suitable for many applications such as:

- Flowlines
- Meter Isolation
- Mol Sieve Dehydration Switching
- Block & Bypass
- Suction & Discharge Isolation
- Heat Transfer Fluids / Hot Oil
- Product Segragation
- Emergency Shutdown
- Dryer Switching
- Hydrogen Service....

The cam guided rotating system provides a smooth movement of the ball that never contacts the seat while rotating. This fact increases the life of the valve with positive sealing even in case of frequent cycling service and decreases maintenance needs to a minimum.

The design of Arflu RSBV allows to change the packing while the valve is pressurized as back seat is provided. Gland flange and gland ring can be removed easily to grant access for packing replacement with simple and standard tools.

Zero leakage can even be achieved in metal to metal valves by means of a special machining for services where total tightness of the seat is mandatory.

Special fugitive emission approved packings and live loaded stuffing box are available to avoid any possible hazardous pollution and comply with the special requirements like TA-Luft and other regulations.

Self cleaning of the sealing surfaces is achieved by means of the gap between the ball and the seat in the rotating step of the opening. The flow itself flushes away any material that may be trapped on the sealing surfaces.

FEATURES OF ARFLU RISING STEM BALL VALVES:

NO FRICTION

Arflu RSBV are based on a rising stem design with cam and pin and a rotating ball that assure low operating torques and friction-free opening and closing.

MAINTENANCE AND SERVICEABILITY

ARFLU Rising Stem Ball valves are top entry type. If any repair is required, these can easily be accessed by removing the upper bonnet without any special tools. The valve should be in open position before repair it.

BACK SEATING

Thanks to the back seat incorporated in our valves, stem packing can be adjusted and replaced easily, even if the line is under pressure.

LOWER TRUNNION

The lower trunnion is part of the ball.

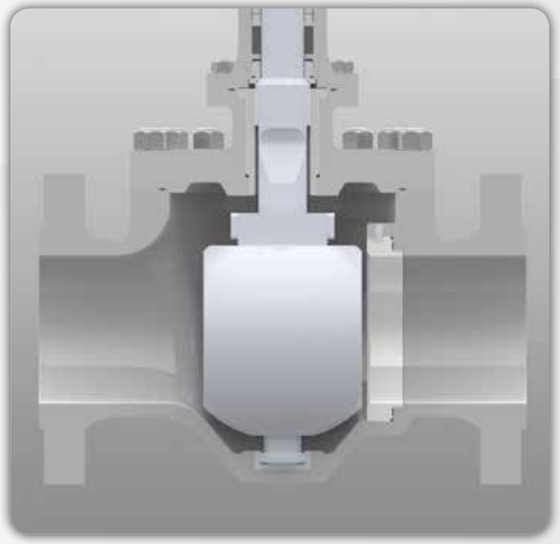
STEM PACKING

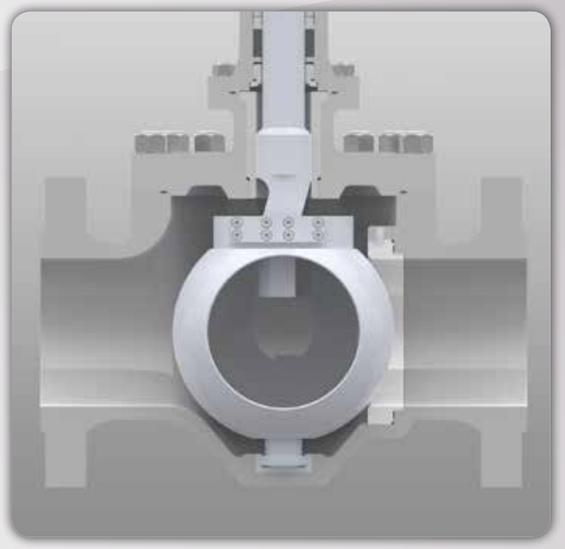
ARFLU Rising Stem Ball valves are equipped with a full-size stem packing; special requirements like TA-Luft or other regulations regarding fugitive emissions, including live loaded packing, can easily be fulfilled.

ACTUATION

ARFLU Rising Stem Ball valves can be equipped with any type of actuator, including linear pneumatic ones.

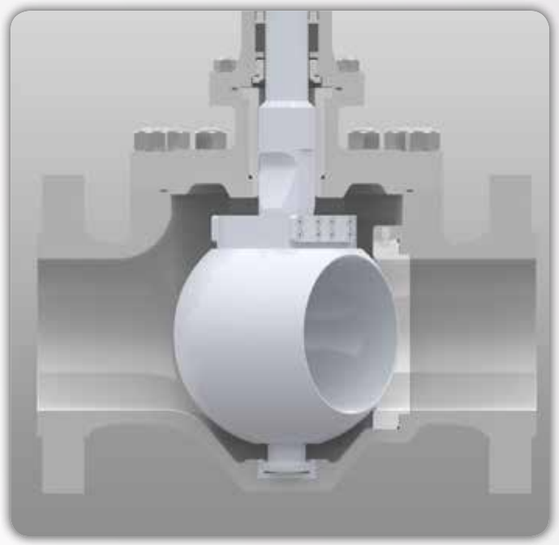
HOW IT WORKS





1. Open position: The valve is in the full open position. The port of the ball is aligned with the port of the body. Stem is fully up. In this position the valve can be back seated to change the packing with full pipeline pressure.

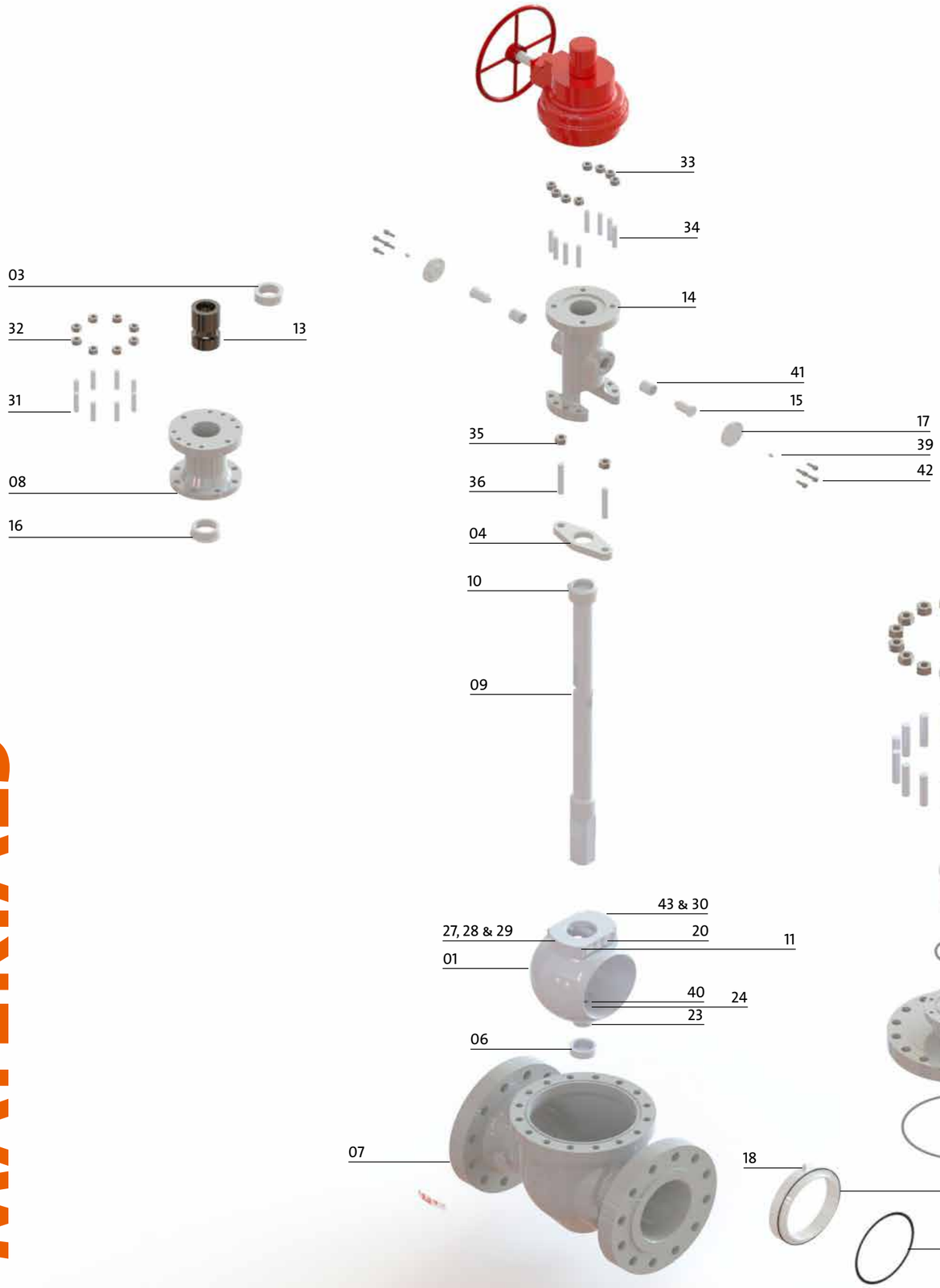
2. Starting to close: As the actuator rotates the stem starts to move downwards. The cam pins do not allow the stem to rotate and the back seat is released. Packing must be securely tightened. The stem moves down up to the cam rotation point where the special machining of the stem makes the ball rotate 90°.



3. When the ball has turned 90° the stem stops rotating and continues with its linear movement. The ball is then positioned against the seat. During the rotation the ball is not in contact with the seat, therefore avoiding any contact and friction force that would damage the sealing surface.

4. Once the ball is positioned the stem pushes the ball to the seat creating a positive sealing. The sealing is achieved by the action of the specially machined stem and by the positive action of the pipeline pressure.

MATERIALS



RISING STEM BALL VALVE

ITEM	DENOMINATION	STEEL VALVE MATERIAL	INOX. VALVE MATERIAL
01	BALL	A105+STELLITE	SS316+STELLITE
02	SEAT	A105+STELLITE	SS316+STELLITE
03	GLAND RING	A-182 F6A CL2	SS3166
04	GLAND FLANGE	A105	SS316
05	GUIDE BUSHING	AISI 420	SS316+STELLITE
06	TRUNNION BUSHING	AISI 420	SS316
07	BODY	ASTM A216 WCB	ASTM A351 CF8M
08	UPPER COVER	A105	SS316
09	STEM	A-182 F6A CL2	SS316
10	GLAND	AISI 420	SS316
11	COVER	A105	SS316
12	PIN	TEMPERED F125	SS316
13	PACKING	GRAFITO	GRAPHITE
14	YOKE	ASTM A216 WCB	ASTM A351 CF8M
15	TRUNNION	F-125T+HF	F-125T+HF
16	BACKSEAT	A-182 F6A CL2	SS316
17	CAM COVER	A105+HF	SS316
18	PIN	8,8	A4-70
19	UPPER COVER	A105	SS316
20	BALL UPPER COVER	A105	SS316
21	OUTER SEAT GASKET	GRAPHITE	GRAPHITE
22	GASKET SEAT	GRAPHITE	GRAPHITE
23	TRUNNION	A-182 F6A CL2	SS316+STELLITE
24	ADJUSTING BALL	A105	SS316
25	GASKET	SS316+GRAPHITE	SS316+GRAPHITE
26	GASKET	SS316+GRAPHITE	SS316+GRAPHITE
27	SCREW	8,8	A4-70
28	SCREW	8,8	A4-70
29	PIN	8,8	A4-70
30	PACKING RING	STEEL	SS
31	STUD	A193 B7	A193 B8M CL2
32	NUT	A194 2H	A194 GR 8M
33	NUT	A194 2H	A194 GR 8M
34	STUD	A193 B7	A193 B8M CL2
35	NUT	8.8	A4-70
36	STUD	8.8	A4-70
37	NUT	A194 2H	A194 GR 8M
38	STUD	A193 B7	A193 B8M CL2
39	GREASE INYECTOR	STEEL ZINC	SS
40	SCREW	8,8	A4-70
41	BEARING	STEEL	STEEL
42	SCREW	8,8	A4-70
43	ADJUST PACKING RING	A105	SS316

*** Other materials available upon request**

MANUFACTURING PROGRAM

REDUCED & FULL BORE

CLASS 150 2" TO 24"
CLASS 300 2" TO 24"
CLASS 600 2" TO 24"
CLASS 900 2" TO 16"
CLASS 1500 2" TO 16"
CLASS 2500 2" TO 10"

MATERIALS

We manufacture these valves in many materials such as Carbon Steel. Alloy Steel, Stainless Steel, High/Nickel Alloys, Duplex & Superduplex and other special materials.

SEATS

Depending on the operating conditions and client's requirements RSBV can be supplied either metal seated or with different soft seat materials.

AFTER SALES SERVICES

Arflu After Sales Service can carry out Maintenance and repairs for Rising Stem Ball valves and any other product of our range of production.

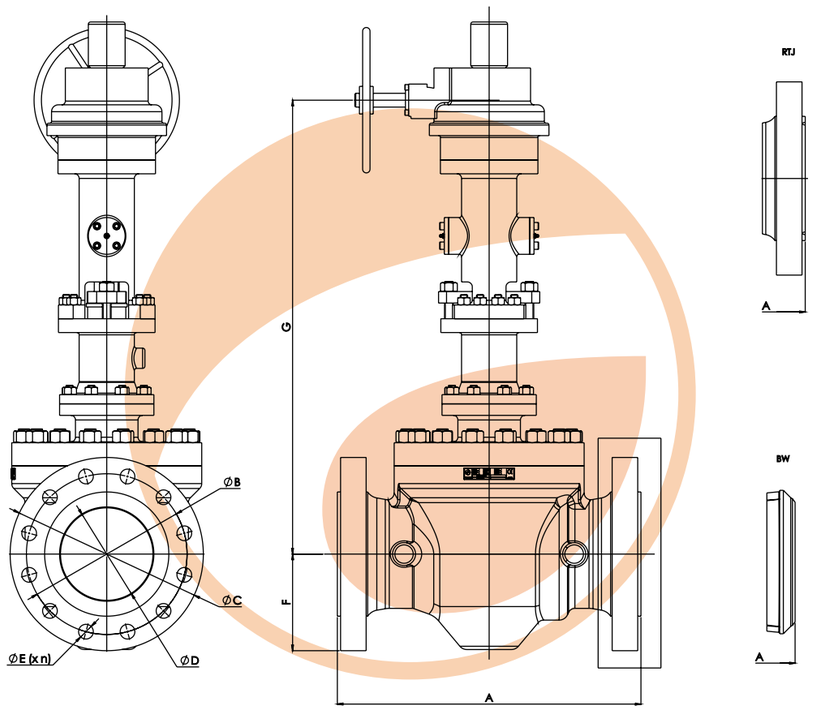
* **Arflu is able to adjust to client's requirement**

Rising Stem Ball Valve

COD. ARSB-1000

PETROCHEMICAL & ENERGY DIVISION

RSBV FULL & REDUCED BORE **CLASS 150 2" TO 24"**



CLASS 150

SIZE	A			B	C	D	E (XN)	F	G (FB)	G (RB)	OPERATOR
(inch)	RF (mm)	RTJ (mm)	BW (mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
2"	178	191	216	120,7	150	49	19 (X4)	75	370	370	HANDWHEEL
3"	203	216	282	152,4	190	74	19 (X4)	95	450	370	HANDWHEEL
4"	229	242	305	190,5	230	100	19 (X8)	115	530	450	HANDWHEEL
6"	394	407	457	241,3	280	150	22 (X8)	140	570	530	HANDWHEEL
8"	457	470	521	298,5	345	201	22 (X8)	172,5	607	570	GEARBOX
10"	533	546	559	362	405	252	25 (X12)	202,5	680	607	GEARBOX
12"	610	623	635	431,8	485	303	25 (X12)	242,5	795	680	GEARBOX
14"	686	699	762	476,3	535	334	29 (X12)	267,5	852	795	GEARBOX
16"	762	775	838	539,8	595	385	29 (X16)	297,5	962	852	GEARBOX
20"	914	927	991	635	700	487	32 (X20)	350	1175	962	GEARBOX
24"	1067	1080	1143	749,3	815	589	35 (X20)	407,5	1375	1175	GEARBOX

NOTE - Dimensions are for information only. Certified dimensional drawings are available upon request.

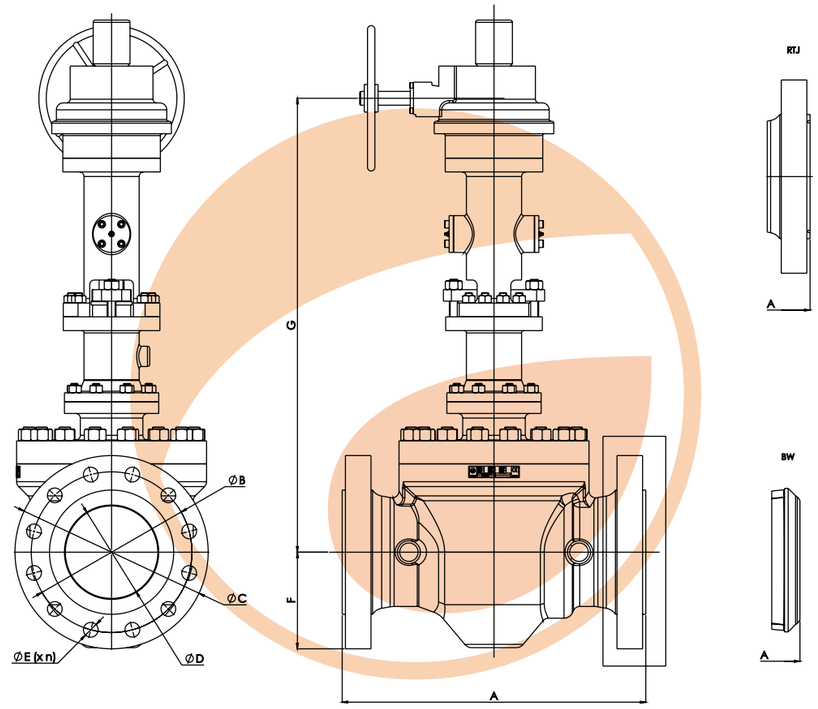
***NOTE - Larger sizes available upon request.**

Rising Stem Ball Valve

COD. ARSB-3000

PETROCHEMICAL & ENERGY DIVISION

RSBV FULL & REDUCED BORE **CLASS 300 2" TO 24"**



CLASS 300

SIZE	A			B	C	D	E (XN)	F	G (FB)	G (RB)	OPERATOR
(inch)	RF (mm)	RTJ (mm)	BW (mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
2"	216	232	216	127	165	49	19 (X8)	82,5	430	430	HANDWHEEL
3"	282	298	282	168,3	210	74	22 (X8)	105	530	430	HANDWHEEL
4"	305	321	305	200	255	100	22 (X8)	127,5	630	530	HANDWHEEL
6"	403	419	457	269,9	320	150	22 (X12)	160	668	630	HANDWHEEL
8"	502	518	521	330,2	380	201	25 (X12)	190	765	668	GEARBOX
10"	568	584	559	387,4	445	252	29 (X16)	222,5	930	765	GEARBOX
12"	648	664	635	450,8	520	303	32 (X16)	260	1072	930	GEARBOX
14"	762	778	762	514,4	585	334	32 (X20)	292,5	1140	1072	GEARBOX
16"	838	854	838	871,5	650	385	35 (X20)	325	1260	1140	GEARBOX
20"	991	1010	991	685,8	775	487	35 (X24)	387,5	1510	1260	GEARBOX
24"	1143	1165	1143	812,8	915	589	41 (X24)	457,7	1665	1510	GEARBOX

NOTE - Dimensions are for information only. Certified dimensional drawings are available upon request.

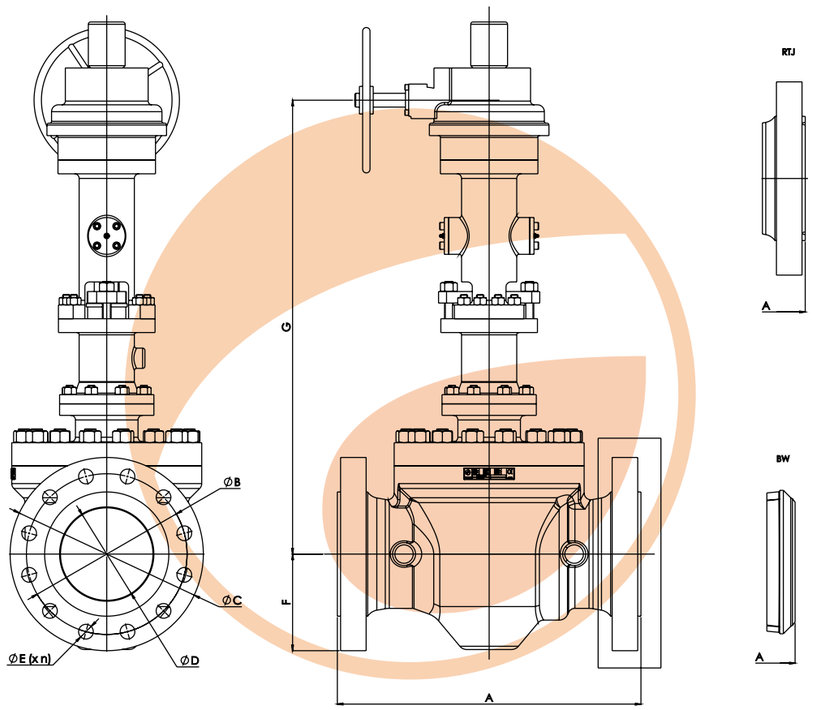
***NOTE - Larger sizes available upon request.**

Rising Stem Ball Valve

COD. ARSB-6000

PETROCHEMICAL & ENERGY DIVISION

RSBV FULL & REDUCED BORE **CLASS 600 2" TO 24"**



CLASS 600

SIZE	A			B	C	D	E (XN)	F	G (FB)	G (RB)	OPERATOR
(inch)	RF (mm)	RTJ (mm)	BW (mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
2"	292	295	292	127	165	49	19 (X8)	82,5	490	490	HANDWHEEL
3"	356	359	356	168,3	210	74	22 (X8)	105	612	490	HANDWHEEL
4"	432	435	432	215,9	275	100	25 (X8)	137,5	733	612	HANDWHEEL
6"	559	562	559	292,1	355	150	29 (X12)	177,5	914	733	HANDWHEEL
8"	660	663	660	349,2	420	201	32 (X12)	210	957	914	GEARBOX
10"	787	790	787	431,8	510	252	35 (X16)	255	1081	957	GEARBOX
12"	838	841	838	489	560	303	35 (X20)	280	1203	1081	GEARBOX
14"	889	892	889	527	605	334	38 (X20)	302,5	1257	1203	GEARBOX
16"	991	994	991	603,2	685	385	41 (X20)	342,5	1487	1257	GEARBOX
20"	1194	1200	1194	723,9	815	487	44 (X24)	407,5	1648	1487	GEARBOX
24"	1397	1407	1397	838,2	940	589	51 (X24)	470	1775	1648	GEARBOX

NOTE - Dimensions are for information only. Certified dimensional drawings are available upon request.

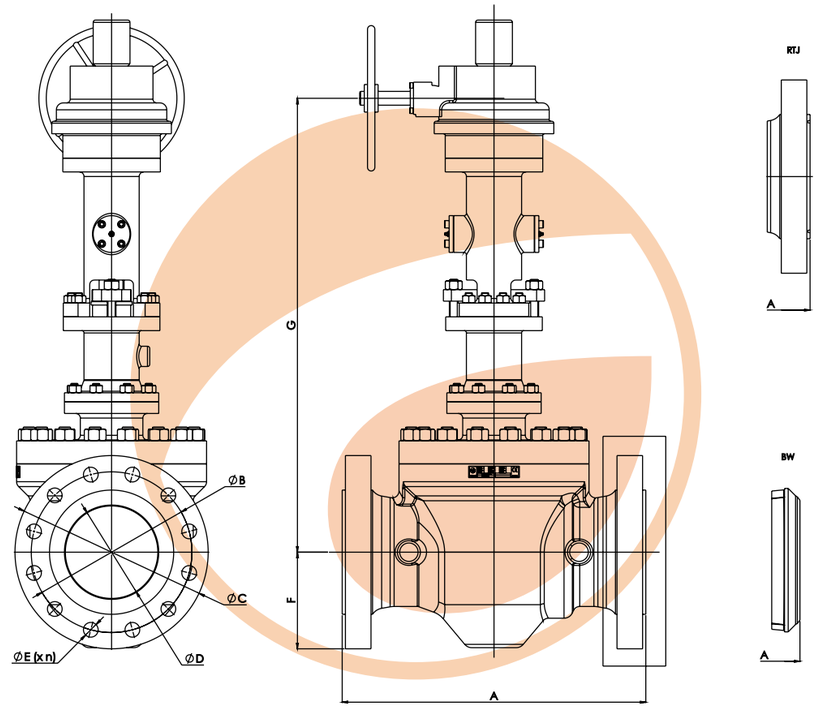
***NOTE - Larger sizes available upon request.**

Rising Stem Ball Valve

COD. ARSB-9000

PETROCHEMICAL & ENERGY DIVISION

RSBV FULL & REDUCED BORE **CLASS 900 2" TO 16"**



CLASS 900

SIZE	A			B	C	D	E (XN)	F	G (FB)	G (RB)	OPERATOR
(inch)	RF (mm)	RTJ (mm)	BW (mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
2"	368	371	368	365,1	215	49	25 (X8)	107,5	530	530	HANDWHEEL
3"	381	384	381	190,5	240	74	25 (X8)	120	760	530	HANDWHEEL
4"	457	460	457	235	290	100	32 (X8)	145	900	760	HANDWHEEL
6"	610	613	610	317,5	380	150	32 (X12)	190	1012	900	HANDWHEEL
8"	737	740	737	393,7	470	201	38 (X12)	235	1012	1012	GEARBOX
10"	838	841	838	469,9	545	252	38 (X16)	272,5	1224	1012	GEARBOX
12"	965	968	968	533,4	610	303	38 (X20)	305	1364	1224	GEARBOX
14"	1029	1039	1029	558,8	640	322	41 (X20)	320	1381	1364	GEARBOX
16"	1130	1140	1130	616	705	373	44 (X20)	352,5	1636	1381	GEARBOX

NOTE - Dimensions are for information only. Certified dimensional drawings are available upon request.

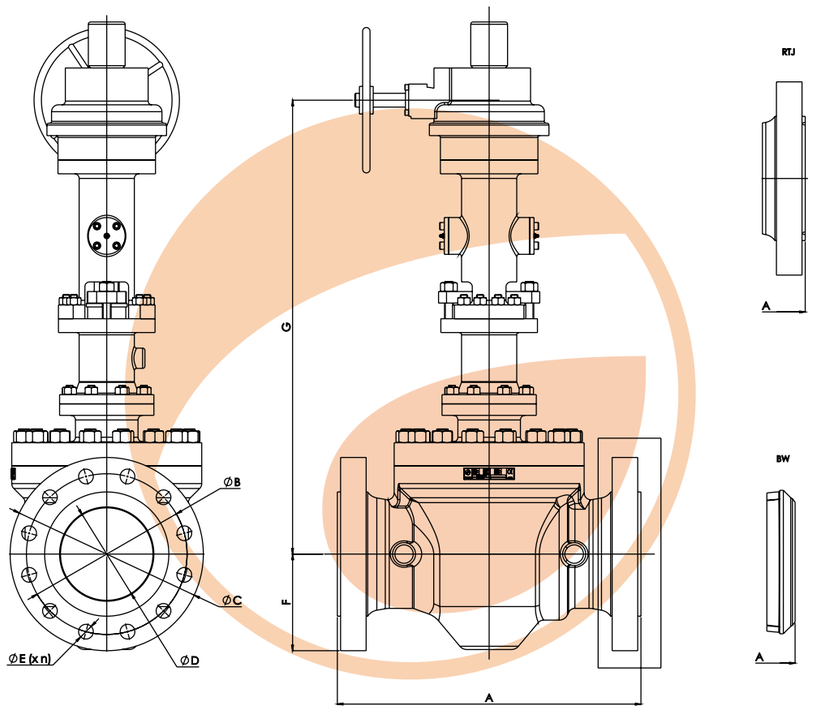
***NOTE - Larger sizes available upon request.**

Rising Stem Ball Valve

COD. ARSB-4000

PETROCHEMICAL & ENERGY DIVISION

RSBV FULL & REDUCED BORE **CLASS 1500 2” TO 16”**



CLASS 1500

SIZE	A			B	C	D	E (XN)	F	G (FB)	G (RB)	OPERATOR
(inch)	RF (mm)	RTJ (mm)	BW (mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
2”	368	371	368	165,1	215	49	25 (X8)	107,5	690	690	HANDWHEEL
3”	470	473	470	203,2	265	74	32 (X8)	132,5	847	690	HANDWHEEL
4”	546	549	546	241,3	310	100	35 (X8)	155	1004	847	HANDWHEEL
6”	705	711	705	317,5	395	144	38 (X12)	197,5	1119	1004	HANDWHEEL
8”	832	842	832	393,7	485	192	44 (X12)	242,5	1204	1119	GEARBOX
10”	991	1001	991	482,6	585	239	51 (X12)	292,5	1377	1204	GEARBOX
12”	1130	1146	1130	571,5	675	287	54 (X16)	337,5	1537	1377	GEARBOX
14”	1257	1276	1257	635	750	315	60 (X16)	375	1556	1537	GEARBOX
16”	1384	1406	1384	704,8	825	360	67 (X16)	412,5	1843	1556	GEARBOX

NOTE - Dimensions are for information only. Certified dimensional drawings are available upon request.

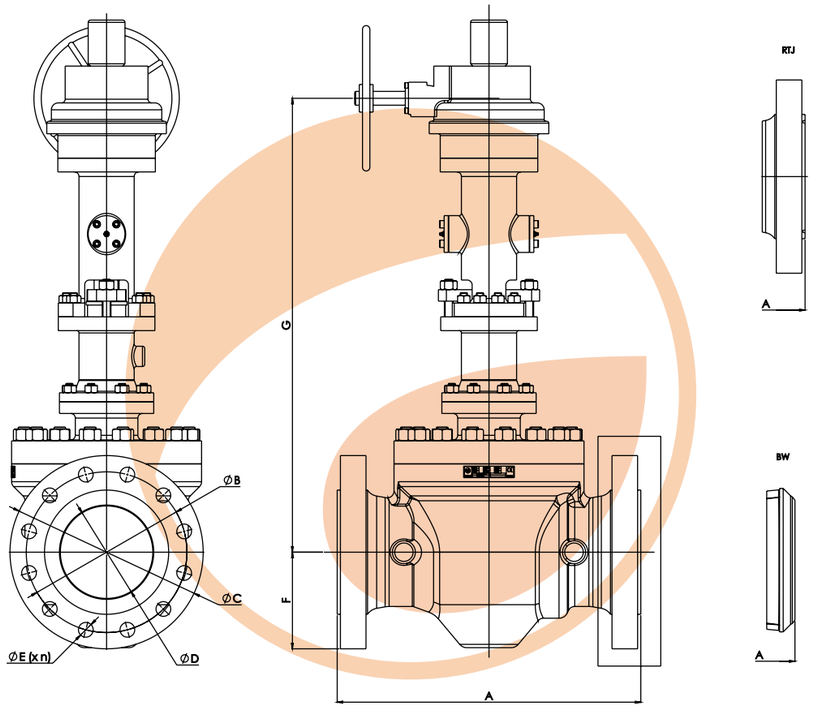
***NOTE - Larger sizes available upon request.**

Rising Stem Ball Valve

COD. ARSB-7000

PETROCHEMICAL & ENERGY DIVISION

RSBV FULL & REDUCED BORE **CLASS 2500 2” TO 10”**



CLASS 2500

SIZE	A			B	C	D	E (XN)	F	G (FB)	G (RB)	OPERATOR
(inch)	RF (mm)	RTJ (mm)	BW (mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
2”	451	454	451	165,1	215	49	44 (X12)	107,5	660	660	GEARBOX
3”	478	585	478	203,2	265	74	63 (X12)	132,5	791	660	GEARBOX
4”	674	683	674	241,3	310	100	89 (X12)	155	963	791	GEARBOX
6”	915	928	915	317,5	395	144	133 (X12)	197,5	1240	963	GEARBOX
8”	1023	1039	1023	393,7	485	192	181 (X12)	242,5	1527	1240	GEARBOX
10”	1270	1293	1270	482,6	585	239	225 (X12)	292,5	1781	1527	GEARBOX

NOTE - Dimensions are for information only. Certified dimensional drawings are available upon request.

***NOTE - Larger sizes available upon request.**

LIST OF REFERENCE DESIGN STANDARDS:

The Rising Stem Ball valves meet the international standards listed below:

1. API 6D:
Pipeline Valves. Pressure Test Specification.

2. ANSI B 16.34:
Valves-Flanged, Threaded, and Welding End.

3. ANSI B 16.5:
Steel Pipe Flanges and Flanges Fittings, Flange dimensions.

4. ANSI B 16.10:
Face-to-Face and End-to-End Dimensions of Ferrous Valves.

5. API 598:
Valve Inspection and Test. Optional Test Specification.

THE COMPETITIVE ADVANTAGES RISING STEM BALL

1- BACK SEATING
Stem packing easily replaced or adjusted, even if line is under pressure

2- LATEST DESIGN
Our design is optimized by the most modern informatic technology, 3D design, finite element calculus, etc.

3- NO CONTACT BETWEEN BALL & SEAT DURING ROTATION

4- NO FRICTION
Low operating torques and friction-free opening & closing.

5- MAINTENANCE AND SERVICEABILITY
Top Entry Design.
Low cost maintenance.

6- STEM PACKING
with special requirements (i.e. TA-Luft, fugitive emissions, etc)

7- NO THERMAL EXPANSION PROBLEM

8- BLOWOUT PROOF STEM

9- TOP ENTRY DESIGN

arflu
INDUSTRIAL VALVES

Absolute Regulation of Fluids

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www.arflu.com

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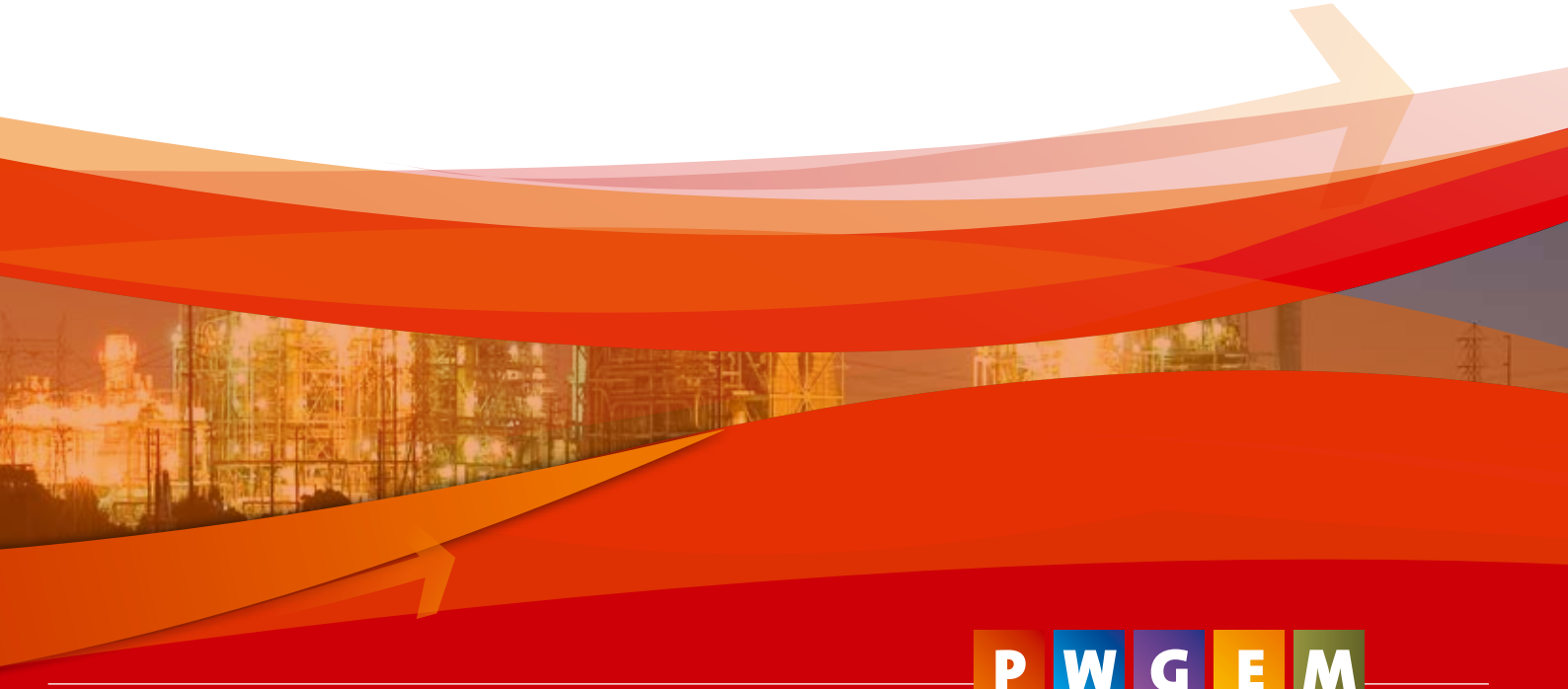
INDUSTRIAL VALVES

Absolute Regulation of Fluids



P PETROCHEMICAL DIVISION
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G GAS DIVISION
E ENERGY DIVISION
M MARINE DIVISION

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