



SFEROVA
BALL VALVES

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HISTORY

Thanks to the insight of the founder **Igino Villa**, Sferova was established in **1973** in a workshop in Bernareggio (MB), initially to machine stainless steel parts. Igino, a designer and metallurgist, soon developed the first series of ball valves for an important Milanese chemical firm. This led to a passion and vision for the product, which together with great willingness and professionalism, enabled **Sferova** to grow and become known as a manufacturer of high-quality ball valves. The year **1983** marked the first stage of major growth, occupying a new industrial area of 800 square meters in Ronco Briantino (MB) with the first CNC tools for machining being installed. The range of valves designed and constructed expanded; valves of increasingly larger sizes and heavy-duty valves for very high pressures were engineered and delivered, and the number of employees continued to increase. Over the next few years, Sferova began a substantial international marketing campaign, appointing exclusive agents in the most strategic areas. As a result, the company was added to the vendor lists of some of the most important companies in the oil and gas sector. In **2008**, Sferova transferred its headquarters to a new, modern industrial complex in Sulbiate (MB), which was specifically designed for manufacturing activities. The area is approximately 11,000 square meters. Staff numbers continued to grow over the next few years and new graduates were employed in the various offices, reaching the figure of 50 employees. In **2012** Sferova was selected to become part of



The founder Igino Villa while designing the first ball valves series 1973



Ball valve assembly phase in the first Sferova location



Valve machining with an horizontal lathe 1978



1996 Group shot



Panoramic photo Sulbiate headquarters



Sferova modern reception



R&D and qualification prototype test area



36" 600 class ball valves ready for test

the largest and most important technology park in Kazakhstan, in Aksai (AIP), after satisfying the Kazakh government's request for a local production site. **Sferova Kazakhstan** was therefore founded, and in a short time became a leader in the production of high-tech ball valves, featured on the vendor lists of Kazakhstan's most important oil companies. The area for valve production is 1,700 square meters. In **2014**, Sferova made another important investment by creating the **Sferova Changshu Valve Company**, a fully owned branch production plant in China, for the purpose of producing extremely high-quality ball valves at reduced costs. Valve engineering, management and quality procedures are entirely Italian. The most important professional roles are also covered by Italian staff, which has allowed Sferova Changshu to enter the global market with very high-quality valves at extremely competitive prices. The area devoted to production is 5,000 square meters, while the offices occupy an additional 400 square meters. In **2018** Sferova expanded its activities overseas, establishing a new commercial office in Houston, Texas, and created **Sferova USA LLC**. The aim is to penetrate the markets of the US, Canada and South America, and strengthen and expand relationships with the most important local oil and gas companies. Our passion for providing solutions to the oil and gas industry continues, as we invest in the future and serve our customers' requirements worldwide.

COMPANY PROFILE

Sferova Srl is an Italian company and leader in the production of ball valves, whose aim is to supply products of the highest level of quality and reliability to the energy sector. Since 1973, Sferova has been designing and manufacturing valves with the help of teams of engineers committed to finding solutions to project requirements by concentrating on areas such as structural analysis, fatigue analysis, risk analysis and engineering of materials that contribute to guaranteeing the reliability of the valves. Sferova has strategically diversified its areas of production with the aim of serving international customers according to geographic area and product type. Thanks to its pioneering construction and manufacturing technologies, and consolidated know-how, the company is able to produce highly technological valves for heavy-duty and arduous applications around the world. This drive for innovation involves new technologies, new materials, new shapes and new markets; product performance is accompanied by the quest for a unique style that unites passion and professionalism.



SFEROVA AGENCY

- ALGERIA
- AUSTRALIA, NEW ZELAND, PAPUA NEW GUINEA
- COLOMBIA
- EGYPT
- INDONESIA
- KOREA
- KUWAIT
- MALAYSIA
- MOZAMBIQUE
- NIGERIA
- OMAN
- QATAR
- RUSSIA
- SAUDI ARABIA
- SINGAPORE
- THAILAND
- TUNISIA
- UAE
- UNITED KINGDOM
- VENEZUELA

Sferova S.r.l.



Sferova Headquarters and main production plant is located approx. 30 km North-East of Milan and covers a total area of 22.000 square meters.

Sferova Changshu Valve Co., Ltd.



Sferova established a new production facility in China (Changshu), 100% Italian owned, with the opportunity to supply valves with very competitive prices and with the advantage of Italian design and quality system /procedures.

Sferova Kazakhstan LLP



Sferova was selected to take part in the Aksai Industrial Park (AIP) Sferova Kazakhstan can manage assembling, testing, painting and after sales activities.

Sferova USA LLC



Sferova set up a representative and commercial office in Houston (Texas) in order to start close relationships with major US EPC's and End Users.

CERTIFICATIONS

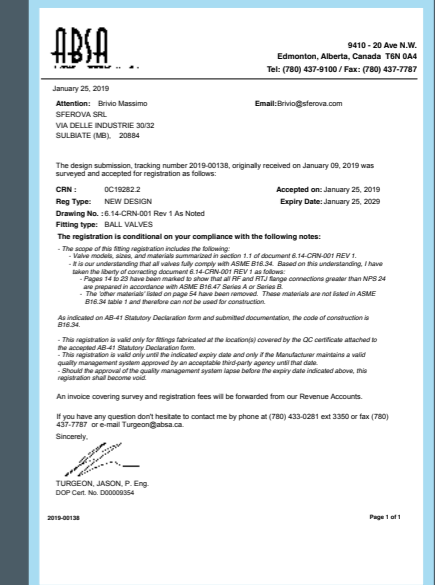
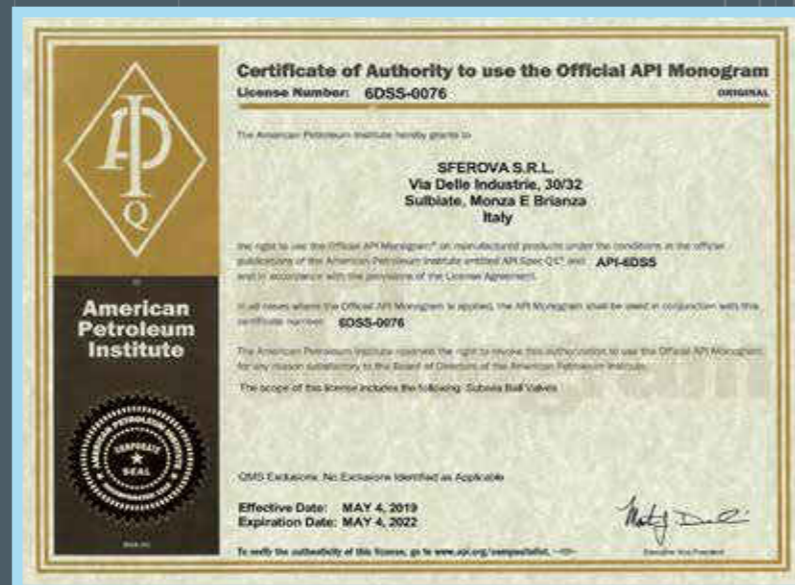
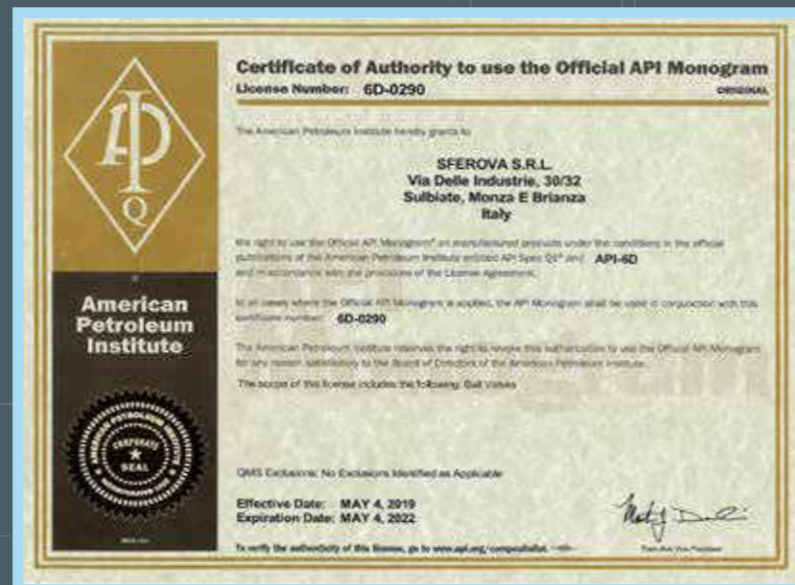
The certifications and qualifications achieved by Sferova are the consequence of the company's continuous dedication and commitment to total quality, in terms of the products, business practices, order management and execution.

From management systems, to best and recommended sector and product practices, and from assessments and predictive analysis to testing and simulation protocols, research and development activities and daily training, Sferova has been built on a background of experience, lessons learnt, know-how and continuously evolving and improving results.

The efforts of Management and the entire organization are focussed every day on excellence and standards of absolute performance, without compromise.

This approach and the results achieved are elements that set Sferova apart, and which are recognised by customers, suppliers, business partners and third parties, to satisfy the most demanding, challenging and restrictive requirements within the Oil and Gas market.

Updated industry certifications are available to download through our website.





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CE **Ex** R200-TX

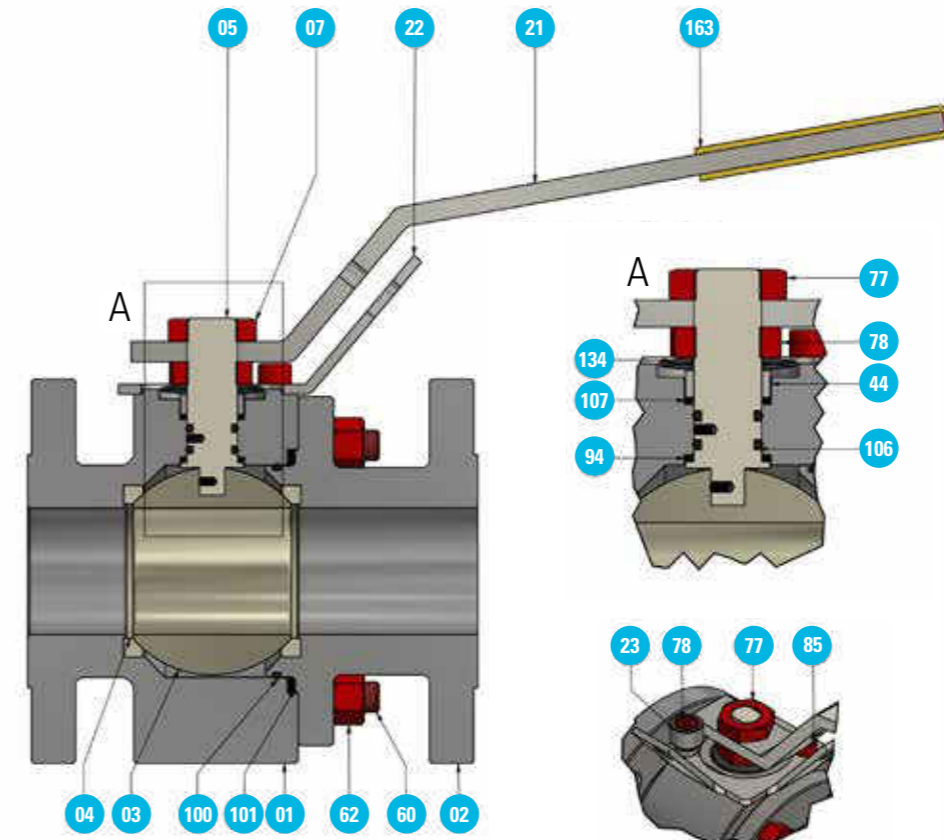
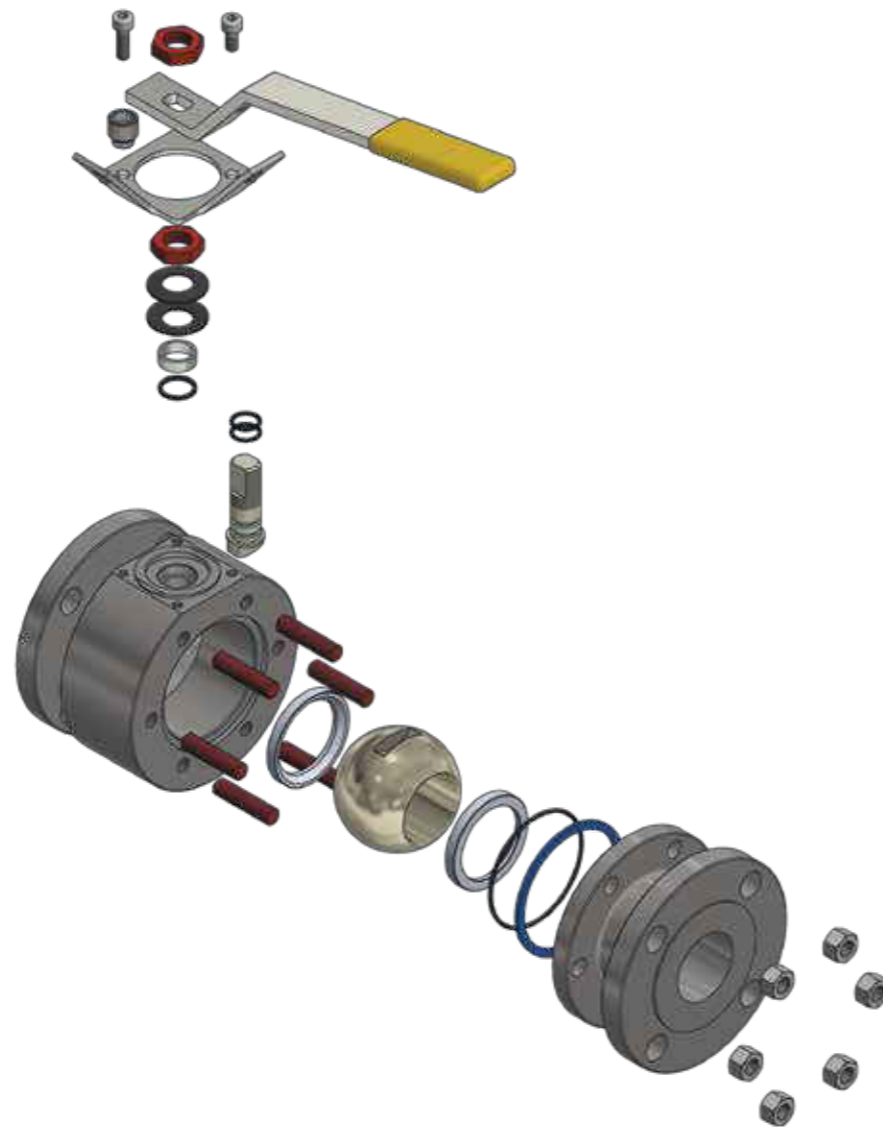
NPS		Class	
Serial No.		Design	
Tag No.		Design Code	
Date	01/10	Design	
PMax@1m		Pressure	
PMax@7M		Pressure	
Body		Material	
Ball		Material	
Seat		Material	
Stem		Material	
Handwheel		Material	
Actuator		Material	
Welding		Material	
Paint		Material	
Accessories		Material	

FLOATING VALVES



TQ2

Floating ball valves, construction to ASME B16.34 – ASME VIII Div.II, 2 piece bolted body, split body, side entry, flanged RF/RTJ to ANSI B16.5, face to face to ANSI B16.10, full/reduced bore, ISO (5211) top work standardization for actuation, seat leakage rate to ISO 5208 Rate A, fire safe certified to BS 6755 Part II-API 607-API6FA, antistatic & blow out proof stem.



POS.	DESCRIPTION
01	BODY
02	CLOSURE
03	BALL
04	SEAT
05	STEM
21	LEVER
22	LOCKING PLATE
23	STOP LEVER
44	SPACER
60	STUD BOLT
62	NUT
78	CUP SCREW
85	CUP SCREW
94	GASKET
100	O-RING
101	GASKET
106	O-RING
107	GASKET
134	BELLEVILLE SPRING
163	CUP LEVER
77	NUT STEM



▶ MAIN DESIGN FEATURES

- ✓ General design in accordance with **ASME B16.34, ISO17292, API 6D**
- ✓ Flanged ends in accordance with **ASME B 16.5**
- ✓ Butt welding ends in accordance with **ASME B 16.25**
- ✓ Socket weld ends in accordance with **ASME B 16.11**
- ✓ Threaded ends NPT-F in accordance with **ASME B 1.20.1** or BSPP to **UNI 338**
- ✓ Face to face in accordance with **API 6D** and **ASME B16.10**
- ✓ Fire Safe in accordance with BS 6755 part II, API 6FA and API 607
- ✓ Bi-directional flow tight
- ✓ Antistatic device and anti-blow-out stem
- ✓ Locking Device (on request)

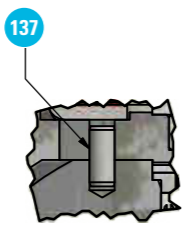
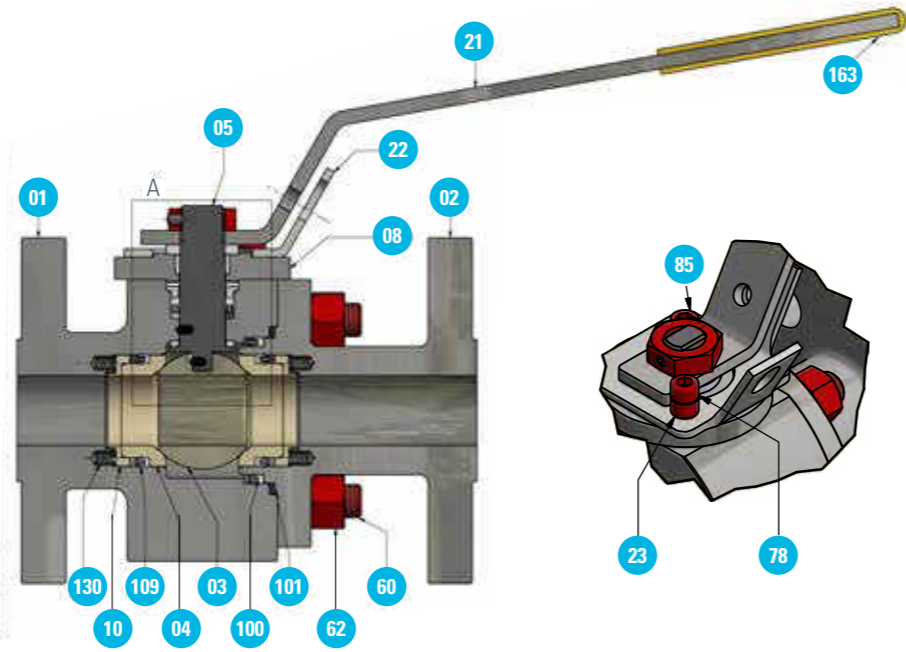
PRODUCT OVERVIEW FLOATING BALL VALVES - SOFT SEATED

SIZE	150	300	600	900	1500	2500
1/2"	☉	☉	☉	☉	☉	☉
3/4"	☉	☉	☉	☉	☉	☉
1"x3/4"	☉	☉	☉	☉	☉	☉
1"	☉	☉	☉	☉	☉	☉
1. 1/2"	☉	☉	☉	☉	☉	☉
2"x1. 1/2"	☉	☉	☉	☉	☉	☉
2"	☉	☉	☉	☉	☉	☉
3"x2"	☉	☉	☉	☉	☉	☉
3"	☉	☉	☉	☉	☉	☉
4"x3"	☉	☉	☉	☉	☉	☉
4"	☉	☉	☉	☉	☉	☉
6"x4"	☉	☉	☉	☉	☉	☉
6"	☉	☉	☉	☉	☉	☉
8"x6"	☉	☉	☉	☉	☉	☉
8"	☉	☉	☉	☉	☉	☉

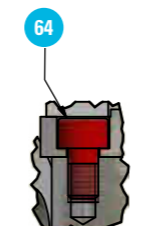


IGI-F

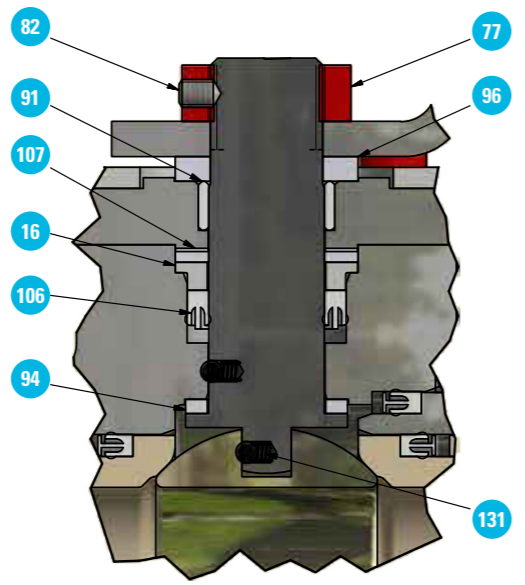
Floating ball valves, construction to ASME B16.34 – ASME VIII Div. II, 2 piece bolted body, split body, side entry, flanged RF/RTJ to ANSI B16.5, face to face to ANSI B16.10, full/reduced bore, ISO (5211) top work standardization for actuation, metal seated (ball & seats with Tungsten or Chromium Carbides coating), seat leakage rate to ISO 5208 RATE C, fire safe design, antistatic & blow out proof stem.



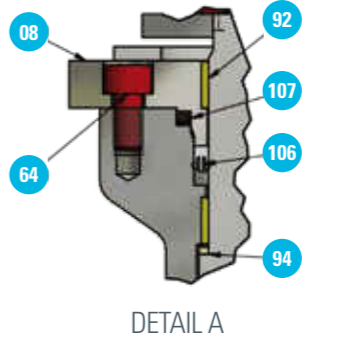
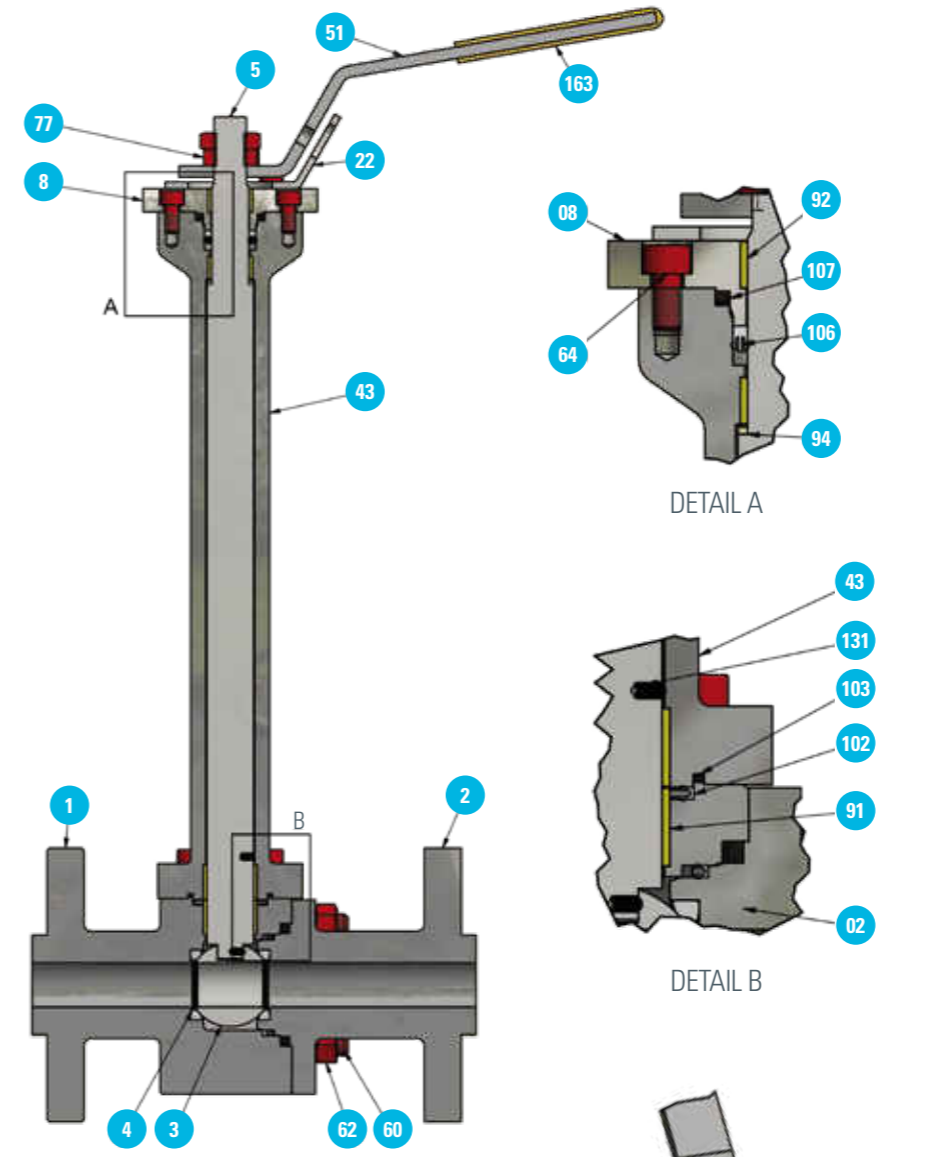
DETAIL PIN



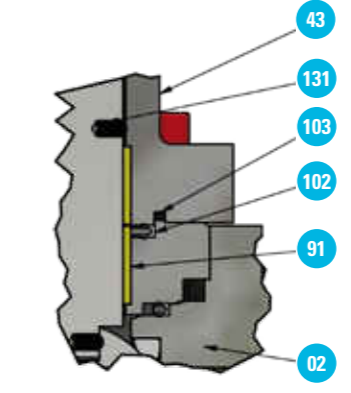
DETAIL CAP SREW



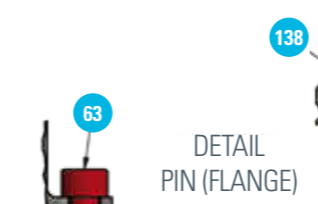
DETAIL A



DETAIL A



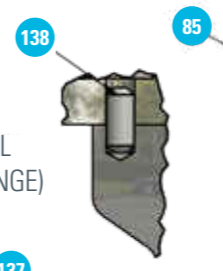
DETAIL B



DETAIL PIN (FLANGE)



DETAIL CAP SREW



DETAIL PIN (BODY)

DESCRIPTION

POS.

BODY	01
CLOSURE	02
BALL	03
SEAT	04
STEM	05
FLANGE	08
BACK SEAT RING	10
GASKET STEM SPACER	16
LEVER	21
LOCKING PLATE	22
LEVER STOP	23
STUD BOLT (BODY/CLOSURE)	60
NUT (BODY/CLOSURE)	62
CAP SCREW (BODY/FLANGE)	64
LEVER NUT	77
CAP SCREW STOP LEVER	78
SET SCREW	82
CAP SCREW LOCKING DEVICE	85
FIRST STEM BEARING	91
THRUST WASHER STEM	94
TRUST WASHER FLANGE	96
FIRST BODY GASKET	100
SECOND BODY GASKET	101
FIRST STEM GASKET	106
SECOND STEM GASKET	107
FIRST SEAT GASKET	109
SEAT SPRING	130
ANTISTATIC SPRING	131
PIN (BODY/ BODY COVER)	137
LEVER CAP	163

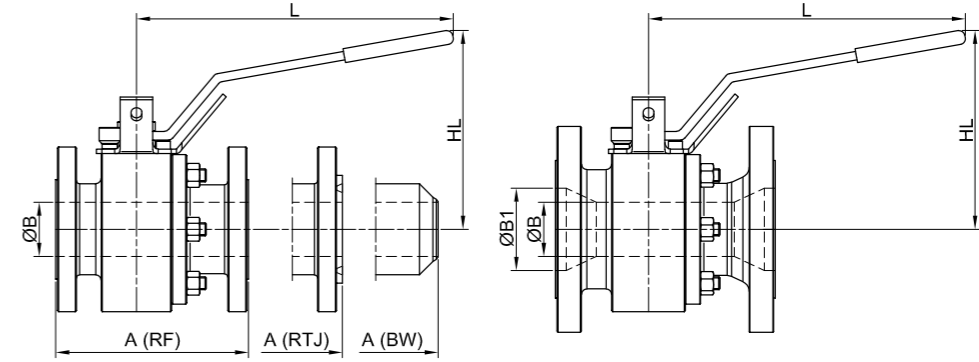
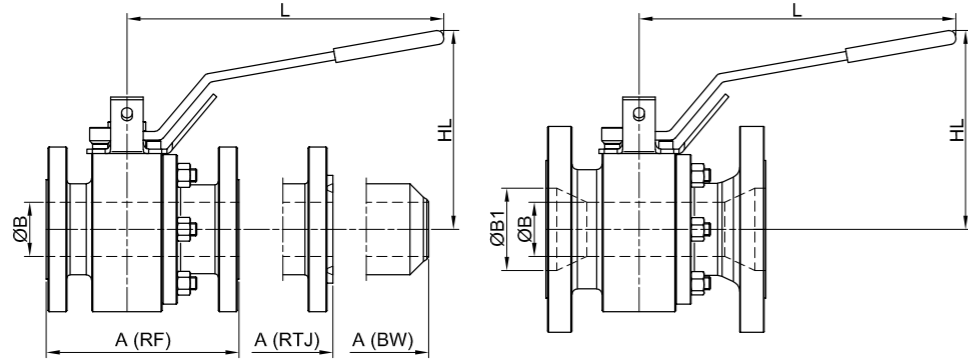
POS.

DESCRIPTION

BODY	01
CLOSURE	02
BALL	03
SEAT	04
STEM	05
FLANGE	08
LOCKING PLATE	22
LEVER STOP	23
CRYO EXTENSION	43
HIGH LEVER (CRYOGENIC EXTENSION)	51
STUD BOLT (BODY/CLOSURE)	60
NUT (BODY/CLOSURE)	62
CAP SCREW (BODY/BODY COVER)	63
CAP SCREW (BODY/FLANGE)	64
LEVER NUT	77
CAP SCREW STOP LEVER	78
CAP SCREW LOCKING DEVICE	85
FIRST STEM BEARING	91
SECOND STEM BEARING	92
THRUST WASHER STEM	94
FIRST BODY GASKET	100
SECOND BODY GASKET	101
FIRST BODY COVER GASKET	102
SECOND BODY COVER GASKET	103
FIRST STEM GASKET	106
SECOND STEM GASKET	107
ANTISTATIC SPRING	131
PIN (BODY/ BODY COVER)	137
PIN (BODY COVER/ FLANGE)	138
LEVER CAP	163

TQ2-CRY

Floating ball valves, construction to ASME B16.34 – ASME VIII Div.II, 2 piece bolted body, split body, side entry, flanged RF/RTJ to ANSI B16.5, face to face to ANSI B16.10, full/reduced bore, ISO (5211) top work standardization for actuation, seat leakage rate to ISO 5208 Rate A, fire safe certified to BS 6755 Part II-API 607-API6FA, antistatic & blow out proof stem. Extended bonnet, materials and seals suitable for cryogenic application @ -196°C.



ASME CLASS 150

SIZE	A-RF	A-RTJ	A-BW	B	B1	HL	L	WEIGHT
1/2"	108	121	140	14	-	116	166	3.5
3/4"x1/2"	117	130	152	14	19	116	166	4
3/4"	117	130	152	19	-	120	166	4.5
1"x3/4"	127	140	165	19	25	120	166	5
1"	127	140	165	25	-	125	180	6
1 1/2"x1"	165	178	190	25	38	125	180	7.5
1 1/2"	165	178	190	38	-	155	250	10
2"x1 1/2"	178	191	216	38	50	155	250	12
2"	178	191	216	50	-	185	290	16
3"x2"	203	216	283	50	76	185	290	22
3"	203	216	283	76	-	217	400	30
4"x3"	229	241	305	76	102	217	400	42
4"	229	241	305	102	-	GEAR	GEAR	58
6"x4"	267	279	403	102	152	GEAR	GEAR	70
6"	394	406	457	152	-	GEAR	GEAR	115
8"x6"	292	305	419	152	203	GEAR	GEAR	155
8"	457	470	521	203	-	GEAR	GEAR	170
10"x8"	330	343	457	203	252	GEAR	GEAR	230

ASME CLASS 300

SIZE	A-RF	A-RTJ	A-BW	B	B1	HL	L	WEIGHT
1/2"	140	151	140	14	-	116	166	4
3/4"x1/2"	152	165	152	14	19	116	166	5
3/4"	152	165	152	19	-	120	166	6
1"x3/4"	165	178	165	19	25	120	166	7
1"	165	178	165	25	-	125	180	8
1 1/2"x1"	190	203	190	25	38	125	180	10
1 1/2"	190	203	190	38	-	155	250	13
2"x1 1/2"	216	232	216	38	50	155	250	14
2"	216	232	216	50	-	185	290	18
3"x2"	283	298	283	50	76	185	290	28
3"	283	298	283	76	-	217	450	43
4"x3"	305	321	305	76	102	217	450	55
4"	305	321	305	102	-	GEAR	GEAR	80
6"x4"	403	419	457	102	152	GEAR	GEAR	115
6"	403	419	457	152	-	GEAR	GEAR	150
8"x6"	419	435	419	152	203	GEAR	GEAR	180

ASME CLASS 600

SIZE	A-RF	A-RTJ	A-BW	B	B1	HL	L	WEIGHT
1/2"	165	165	165	14	-	116	166	5
3/4"x1/2"	190	190	190	14	19	116	166	6
3/4"	190	190	190	19	-	120	166	7
1"x3/4"	216	216	216	19	25	120	166	8
1"	216	216	216	25	-	125	180	9
1 1/2"x1"	241	241	241	25	38	125	180	14
1 1/2"	241	241	241	38	-	155	250	16
2"x1 1/2"	292	295	292	38	50	155	250	18
2"	292	295	292	50	-	185	290	23
3"x2"	356	359	356	50	76	185	290	37
3"	356	359	356	76	-	GEAR	GEAR	65
4"x3"	432	435	432	76	102	GEAR	GEAR	85

ASME CLASS 900

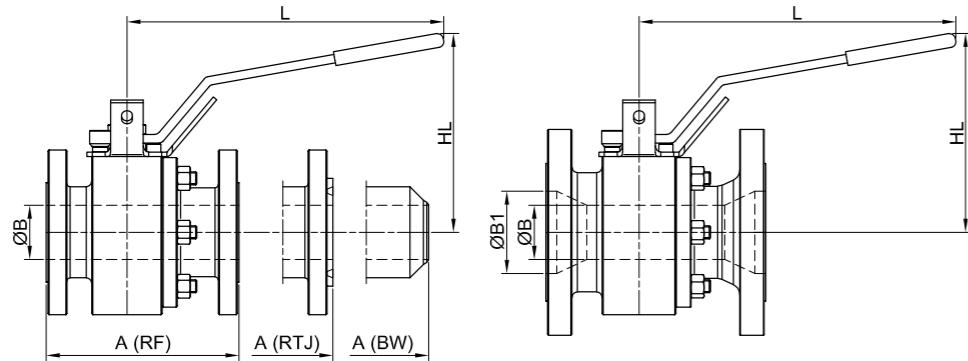
SIZE	A-RF	A-RTJ	A-BW	B	B1	HL	L	WEIGHT
1/2"	216	216	216	14	-	116	166	8
3/4"x1/2"	229	229	229	14	19	116	166	10
3/4"	229	229	229	19	-	139	250	11
1"x3/4"	254	254	254	19	25	139	250	14
1"	254	254	254	25	-	159	290	17
1 1/2"x1"	305	305	305	25	38	159	290	22
1 1/2"	305	305	305	38	-	203	450	27
2"x1 1/2"	368	371	368	38	50	203	450	38
2"	368	371	368	50	-	GEAR	GEAR	63
3"x2"	381	384	381	50	76	GEAR	GEAR	90

Dimensions are in mm, weight in Kilos.

Dimensions are in mm, weight in Kilos.

Dimensions are in mm, weight in Kilos.

Dimensions are in mm, weight in Kilos.



ASME CLASS 1500

SIZE	A-RF	A-RTJ	A-BW	B	B1	HL	L	WEIGHT
1/2"	216	216	216	14	-	116	166	8
3/4"x1/2"	229	229	229	14	19	116	166	10
3/4"	229	229	229	19	-	139	250	11
1"x3/4"	254	254	254	25	19	139	250	14
1"	254	254	254	25	-	159	290	17
1 1/2"x1"	305	305	305	25	38	159	290	22
1 1/2"	305	305	305	38	-	GEAR	GEAR	40
2"x1 1/2"	368	371	368	38	50	GEAR	GEAR	51

Dimensions are in mm, weight in Kilos.

ASME CLASS 2500

SIZE	A-RF	A-RTJ	A-BW	B	B1	HL	L	WEIGHT
1/2"	264	264	264	14	-	125	250	12
3/4"x1/2"	273	273	273	14	19	125	250	14
3/4"	273	273	273	19	-	135	250	16
1"x3/4"	308	308	308	19	25	135	250	19
1"	308	308	308	25	-	185	400	24
1 1/2"x1"	384	387	384	25	38	185	400	32
1 1/2"	384	387	384	38	-	GEAR	GEAR	55
2"x1 1/2"	451	454	451	38	42	GEAR	GEAR	75

Dimensions are in mm, weight in Kilos.



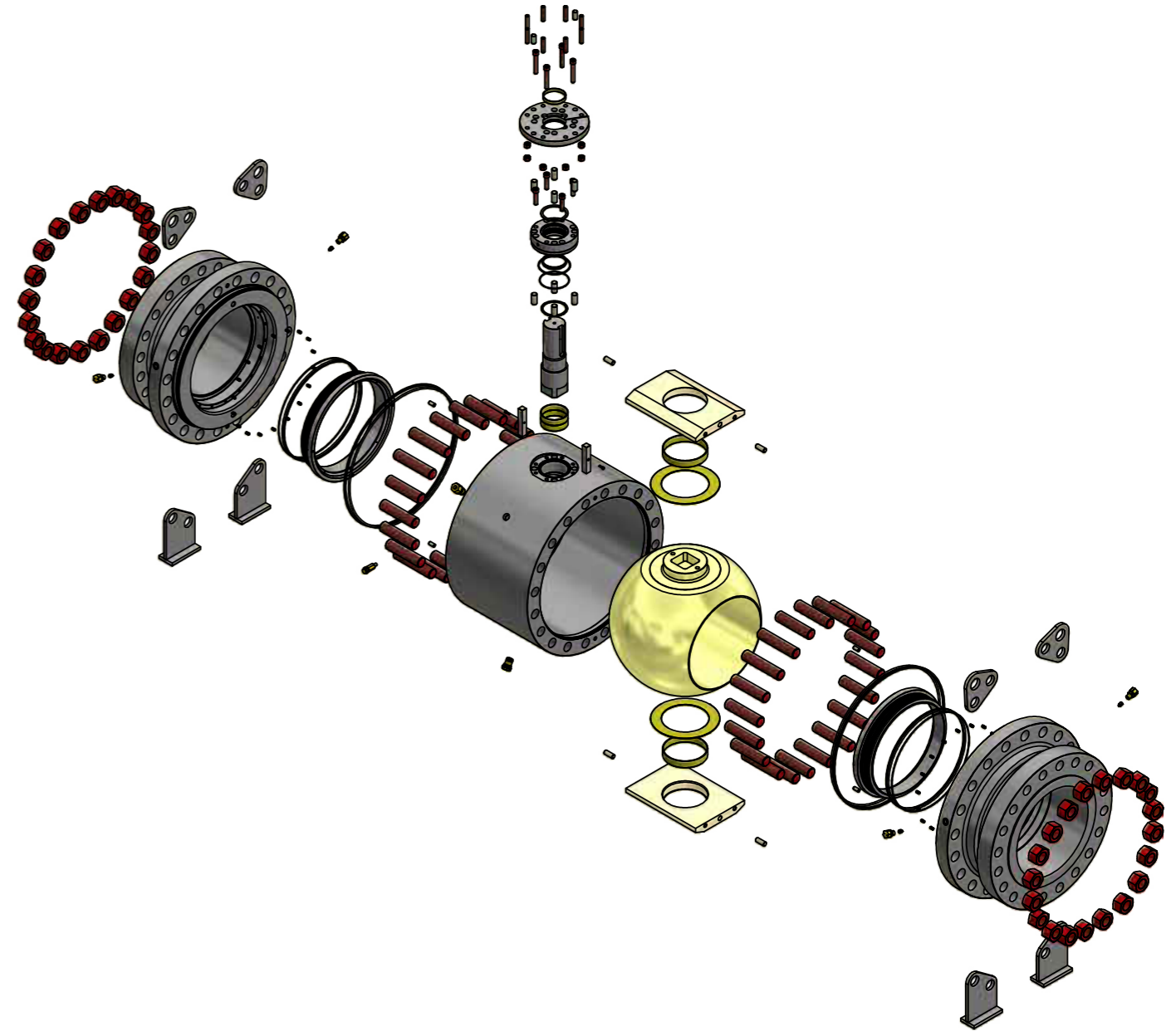
TRUNNION VALVES

TM2/TM3

Trunnion mounted ball valves, construction to ASME B16.34-API6D, 2/3 piece bolted body, split body, side entry, double block & bleed, flanged RF/RTJ to ANSI B16.5, face to face to ANSI B16.10, full/reduced bore, ISO (5211) top work standardization for actuation, seat leakage rate to ISO 5208 Rate A, fire safe certified to BS 6755 Part II-API 607-API6FA, antistatic & blow out proof stem, self-relieving seats, vent & drain.

**PRODUCT OVERVIEW
TRUNNION MOUNTED BALL VALVES**

SIZE	150	300	600	900	1500	2500
1/2"	⊗	⊗	⊗	⊗	⊗	⊗
3/4"x1/2"	⊗	⊗	⊗	⊗	⊗	⊗
3/4"	⊗	⊗	⊗	⊗	⊗	⊗
1"x3/4"	⊗	⊗	⊗	⊗	⊗	⊗
1"	⊗	⊗	⊗	⊗	⊗	⊗
1.1/2"x1"	⊗	⊗	⊗	⊗	⊗	⊗
1.1/2"	⊗	⊗	⊗	⊗	⊗	⊗
2x1. 1/2"	⊗	⊗	⊗	⊗	⊗	⊗
2"	⊗	⊗	⊗	⊗	⊗	⊗
3"x2"	⊗	⊗	⊗	⊗	⊗	⊗
3"	⊗	⊗	⊗	⊗	⊗	⊗
4"x3"	⊗	⊗	⊗	⊗	⊗	⊗
4"	⊗	⊗	⊗	⊗	⊗	⊗
6"x4"	⊗	⊗	⊗	⊗	⊗	⊗
6"	⊗	⊗	⊗	⊗	⊗	⊗
8x6"	⊗	⊗	⊗	⊗	⊗	⊗
8"	⊗	⊗	⊗	⊗	⊗	⊗
10"x8"	⊗	⊗	⊗	⊗	⊗	⊗
10"	⊗	⊗	⊗	⊗	⊗	⊗
12"x10"	⊗	⊗	⊗	⊗	⊗	⊗
12"	⊗	⊗	⊗	⊗	⊗	⊗
14"x10"	⊗	⊗	⊗	⊗	⊗	⊗
14"	⊗	⊗	⊗	⊗	⊗	⊗
16" x 12"	⊗	⊗	⊗	⊗	⊗	⊗
16"	⊗	⊗	⊗	⊗	⊗	⊗
18"x14"	⊗	⊗	⊗	⊗	⊗	⊗
18"	⊗	⊗	⊗	⊗	⊗	⊗
20"x16"	⊗	⊗	⊗	⊗	⊗	⊗
20"	⊗	⊗	⊗	⊗	⊗	⊗
24"x20"	⊗	⊗	⊗	⊗	⊗	⊗
24"	⊗	⊗	⊗	⊗	⊗	⊗
26"	⊗	⊗	⊗	⊗	⊗	⊗
28"x24"	⊗	⊗	⊗	⊗	⊗	⊗
28"	⊗	⊗	⊗	⊗	⊗	⊗
30"	⊗	⊗	⊗	⊗	⊗	⊗
32"	⊗	⊗	⊗	⊗	⊗	⊗
36"	⊗	⊗	⊗	⊗	⊗	⊗
40"	⊗	⊗	⊗	⊗	⊗	⊗
42"	⊗	⊗	⊗	⊗	⊗	⊗
48"	⊗	⊗	⊗	⊗	⊗	⊗

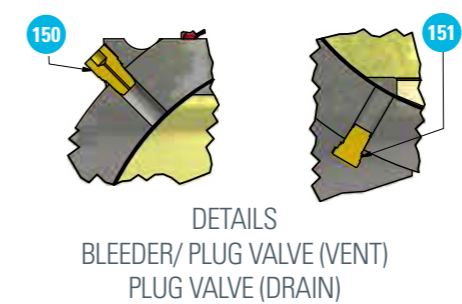
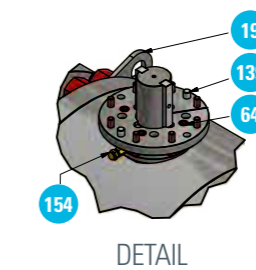
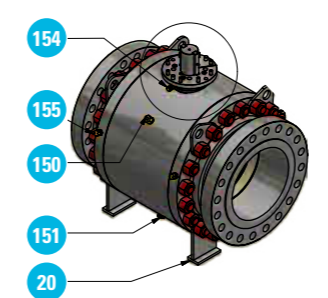
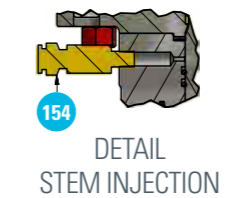
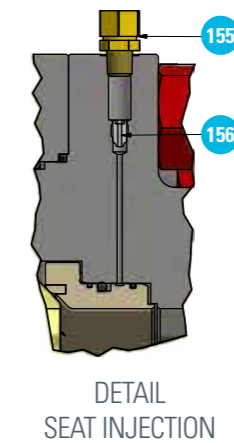
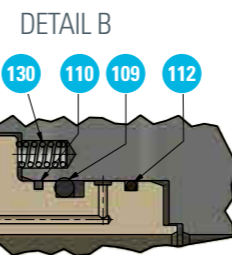
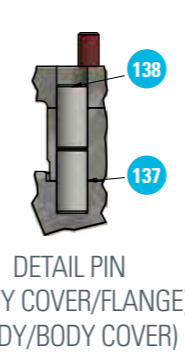
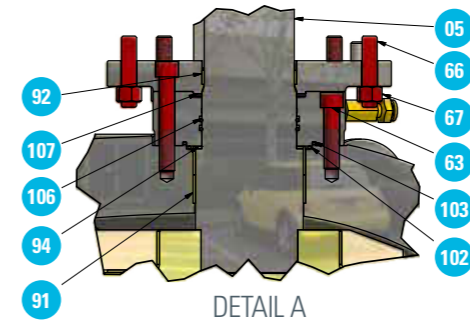
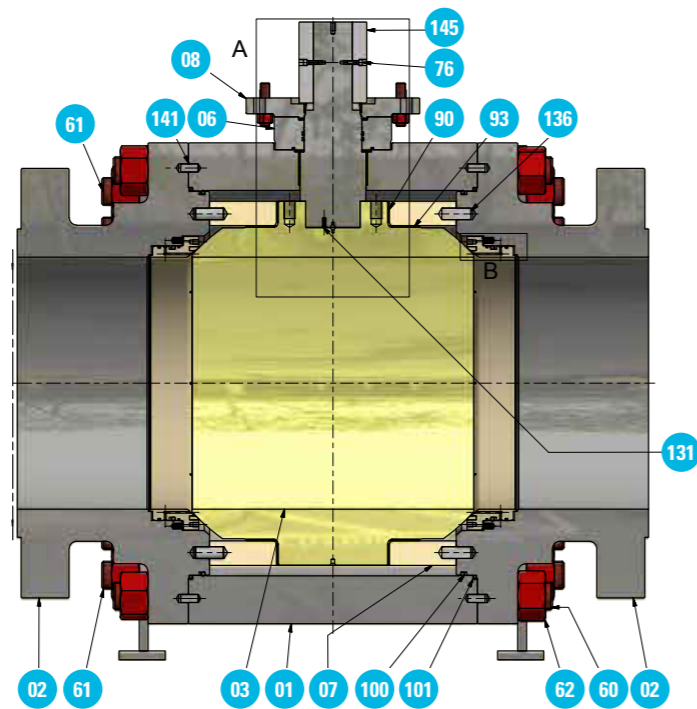




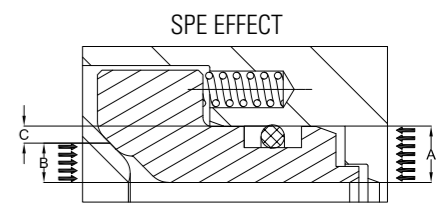
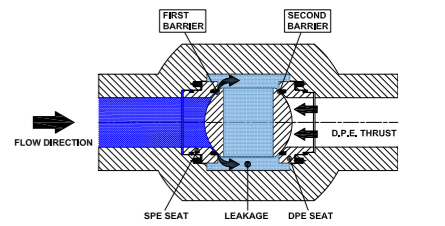
DESCRIPTION	POS.
BODY	01
CLOSURE	02
BALL	03
SEAT	04
STEM	05
BODY COVER	06
SUPPORTING PLATE	07
FLANGE	08
LIFTING LUGS	19
VALVE SUPPORT	20
STUD BOLT (BODY/CLOSURE)	60
STUD BOLT (BODY/CLOSURE)	61
NUT (BODY/CLOSURE)	62
CAP SCREW (BODY/BODY COVER)	63
CAP SCREW (BODY/FLANGE)	64
STUD BOLT (FLANGE/OPERATOR)	66
NUT (FLANGE/OPERATOR)	67
CAP SCREW (KEY)	76
BEARING (BALL/TRUNNION)	90
FIRST STEM BEARING	91
SECOND STEM BEARING	92
THRUST WASHER (BALL/TRUNNION)	93
THRUST WASHER STEM	94
FIRST BODY GASKET	100
SECOND BODY GASKET	101
FIRST BODY COVER GASKET	102
SECOND BODY COVER GASKET	103
FIRST STEM GASKET	106
SECOND STEM GASKET	107
FIRST SEAT GASKET	109
SECOND SEAT GASKET	110
INJECTION SEAT GASKET	112
SEAT SPRING	130
ANTISTATIC SPRING	131
PIN (BALL SUPPORT)	136
PIN (BODY/ BODY COVER)	137
PIN (BODY COVER/FLANGE)	138
PIN (FLANGE/OPERATOR)	139
PIN (BODY/CLOSURE)	141
KEY	145
BLEEDER/ PLUG VALVE (VENT)	150
PLUG VALVE (DRAIN)	151
STEM INJECTION	154
SEAT INJECTION	155
CHECK VALVE FOR SEAT INJECTION	156

MAIN DESIGN FEATURES

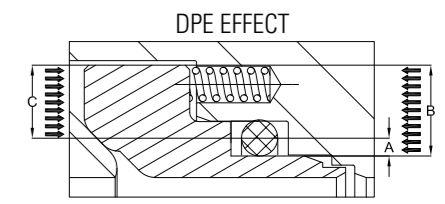
- ✓ General design in accordance with **ASME B16.34, ISO17292, API 6D**
- ✓ Flanged ends in accordance with **ASME B 16.5**
- ✓ Butt welding ends in accordance with **ASME B 16.25**
- ✓ Socket weld ends in accordance with **ASME B 16.11**
- ✓ Threaded ends NPT-F in accordance with **ASME B 1.20.1** or BSPP to **UNI 338**
- ✓ Face to face in accordance with **API 6D** and **ASME B16.10**
- ✓ Fire Safe in accordance with BS 6755 part II, API 6FA and API 607
- ✓ Bi-directional flow tight
- ✓ Antistatic device and anti-blow-out stem
- ✓ Self-aligning floating seat rings with pre-load springs
- ✓ Double Block and Bleed
- ✓ Drain and Vent connections
- ✓ Automatic body cavity relief system
- ✓ Stem and seats injections facility (on request)
- ✓ Locking Device (on request)
- ✓ Lifting lugs (where applicable)
- ✓ Support feet (where applicable)



PISTON EFFECTS SINGLE VS DOUBLE

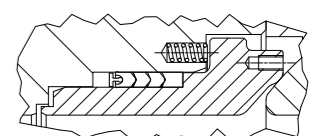


Thanks to the pressure increase, the gap $C = A - B$ produces a single piston effect that pushes the seat to the ball.



The gap $A = B - C$ produces a piston effect that pushes the seat to the ball.

OPTIONAL V-PACK

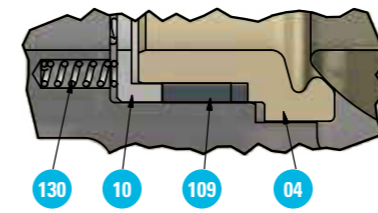
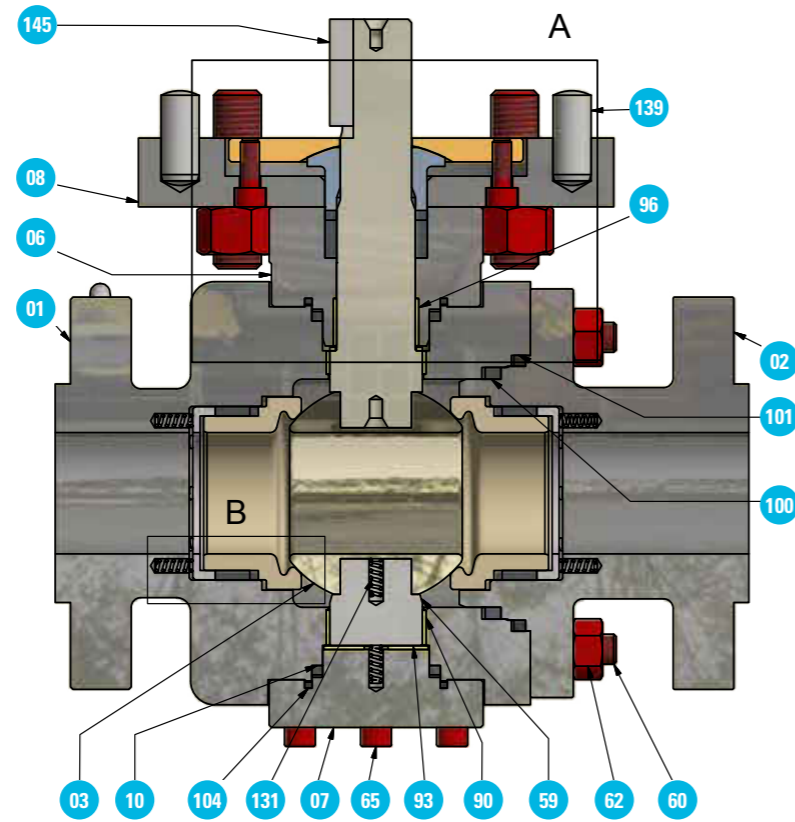


SEAT (SPE) SEALING
DPE AVAILABLE

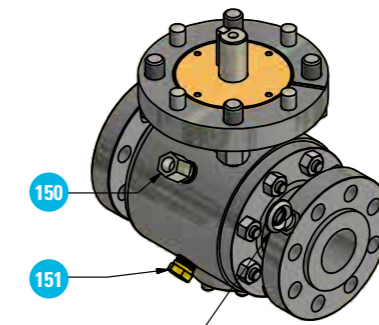


IGI-T

Trunnion mounted ball valves, construction to ASME B16.34-API6D, 2/3 piece bolted body, split body, side entry, double block & bleed, flanged RF/RTJ to ANSI B16.5, face to face to ANSI B16.10, full/reduced bore, ISO (5211) top work standardization for actuation, metal seated (ball & seats with Tungsten or Chromium Carbides coating), seat leakage rate to ISO 5208 RATE C, fire safe design, antistatic & blow out proof stem, self-relieving seats, vent & drain.

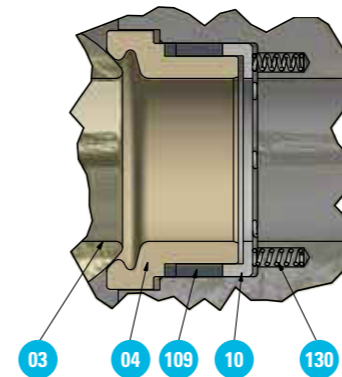


DETAIL B

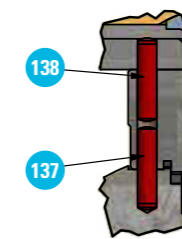


150

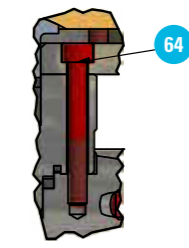
151



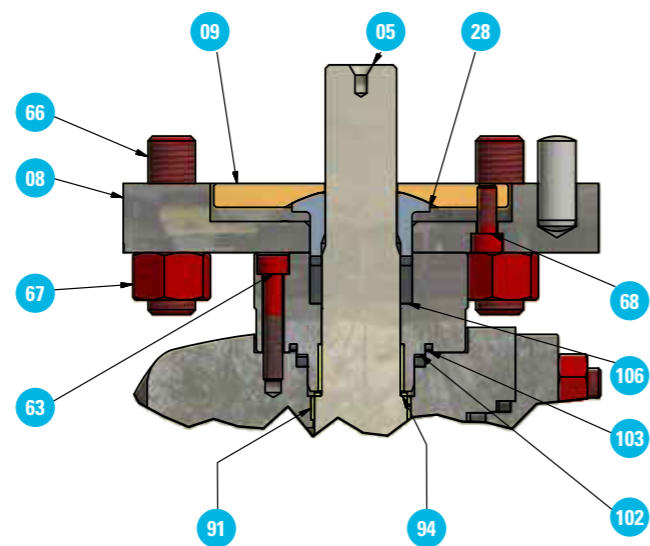
DETAIL SEAT



DETAIL PINS



DETAIL CAP SCREW



DETAIL A

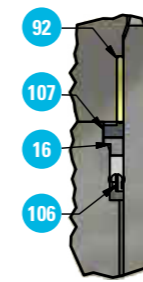
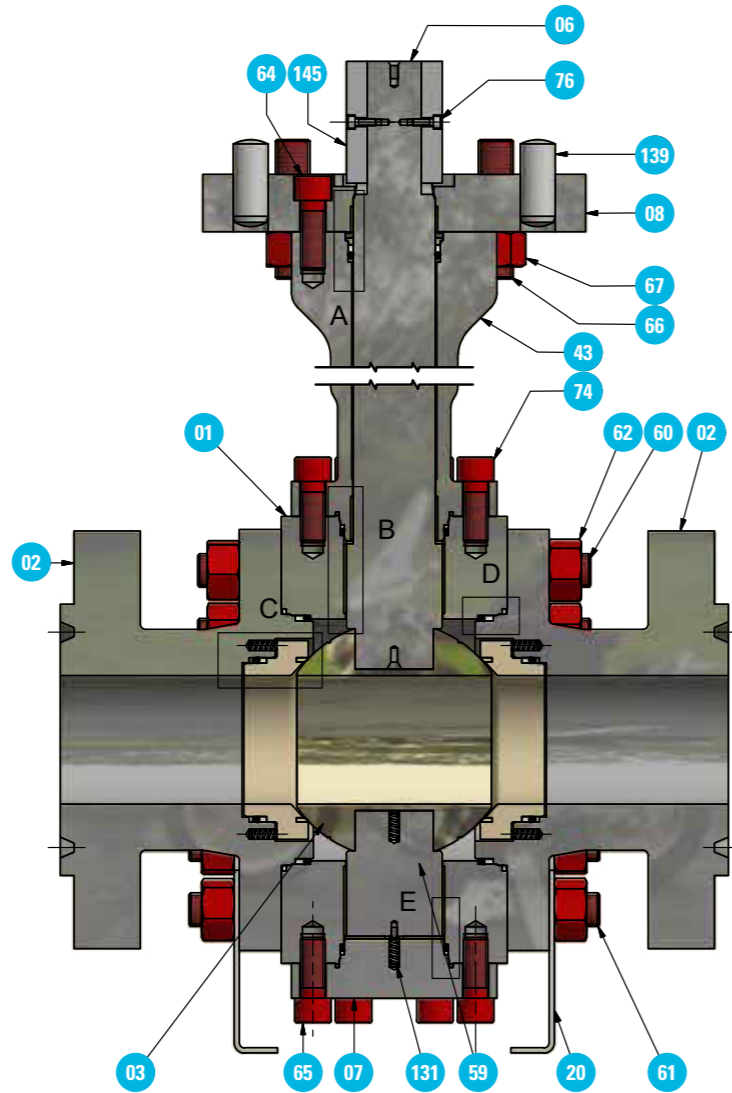


POS.	DESCRIPTION
01	BODY
02	CLOSURE
03	BALL
04	SEAT
05	STEM
06	BODY COVER
07	TRUNNION
08	FLANGE
09	GLAND PLATE
10	BACK SEAT RING
19	LIFTING LUGS
28	GLAND RING
59	BALL SUPPORT
60	STUD BOLT (BODY/CLOSURE)
62	NUT (BODY/CLOSURE)
63	CAP SCREW (BODY/BODY COVER)
64	CAP SCREW (BODY/FLANGE)
65	CAP SCREW (BODY/TRUNNION)
66	STUD BOLT (FLANGE/OPERATOR)
67	NUT (FLANGE/ OPERATOR)
68	CAP SCREW/STUD BOLT GLAND RING
90	BEARING (BALL/TRUNNION)
91	FIRST STEM BEARING
93	THRUST WASHER (BALL/TRUNNION)
94	THRUST WASHER STEM
95	GUIDE STEM
100	FIRST BODY GASKET
101	SECOND BODY GASKET
102	FIRST BODY COVER GASKET
103	SECOND BODY COVER GASKET
104	FIRST TRUNNION GASKET
105	SECOND TRUNNION GASKET
106	FIRST STEM GASKET
109	FIRST SEAT GASKET
130	SEAT SPRING
131	ANTISTATIC SPRING
137	PIN (BODY/ BODY COVER)
138	PIN (BODY/FLANGE)
139	PIN (FLANGE/OPERATOR)
145	KEY
150	BLEEDER/PLUG VALVE (VENT)
151	PLUG VALVE DRAIN

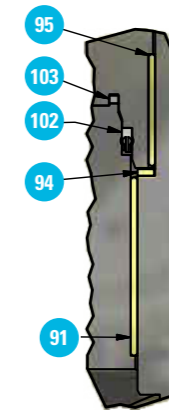


TM2-CRY/TM3-CRY

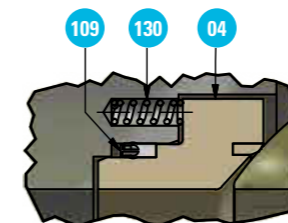
Sferova cryogenic ball valve series are designed according to the main international standard and to perform in the most demanding applications down to -196°C. Validation protocol of each design includes testing @ minimum service temperature, which can be performed in house. Dedicated R&D activities are in progress on a rolling basis to continuously develop the product and each specific component.



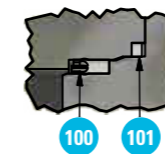
DETAIL A



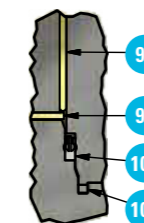
DETAIL B



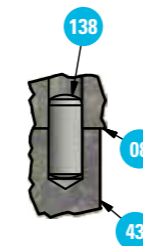
DETAIL C



DETAIL D



DETAIL E



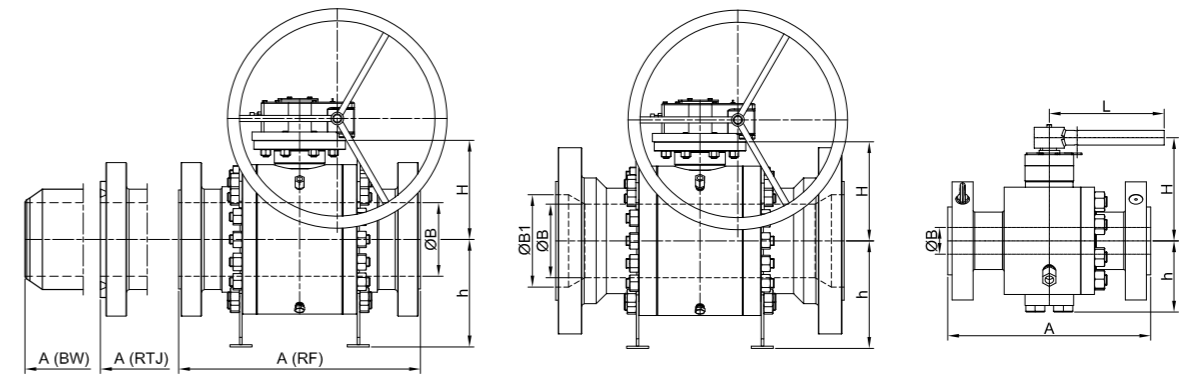
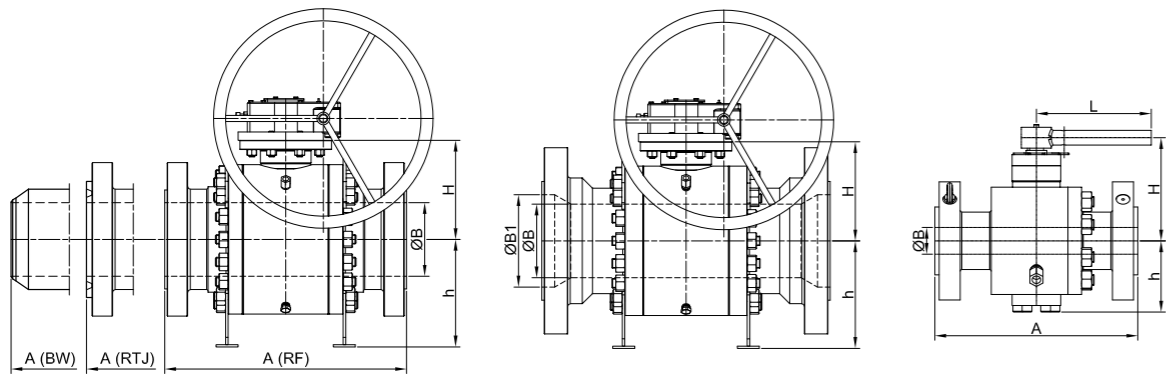
DETAIL
PIN (FLANGE/EXTENSION)



DETAIL
PIN (EXTENSION/BODY COVER)



POS.	DESCRIPTION
01	BODY
02	CLOSURE
03	BALL
04	SEAT
05	STEM
07	TRUNNION
08	FLANGE
16	GASKET STEM SPACER
19	LIFTING LUGS
20	VALVE SUPPORT
43	CRYO EXTENSION
59	BALL SUPPORT
60	STUD BOLT (BODY/CLOSURE)
61	STUD BOLT (BODY/CLOSURE)
62	NUT (BODY/CLOSURE)
64	CAP SCREW (BODY/FLANGE)
65	CAP SCREW (BODY/TRUNNION)
66	STUD BOLT (FLANGE/OPERATOR)
67	NUT (FLANGE/ OPERATOR)
74	STUD BOLT / CAP SCREW (FLANGE/YOKE)
76	CAP SCREW KEY
90	BEARING (BALL/TRUNNION)
91	FIRST STEM BEARING
92	SECOND STEM BEARING
93	THRUST WASHER (BALL/TRUNNION)
94	THRUST WASHER STEM
95	GUIDE STEM
100	FIRST BODY GASKET
101	SECOND BODY GASKET
102	FIRST BODY COVER GASKET
103	SECOND BODY COVER GASKET
104	FIRST TRUNNION GASKET
105	SECOND TRUNNION GASKET
106	FIRST STEM GASKET
107	SECOND STEM GASKET
109	FIRST SEAT GASKET
130	SEAT SPRING
131	ANTISTATIC SPRING
137	PIN (BODY/ BODY COVER)
138	PIN (BODY/FLANGE)
139	PIN (FLANGE/OPERATOR)
145	KEY
151	PLUG VALVE DRAIN



ASME CLASS 150

SIZE	A-RF	A-RTJ	A-BW	B	B1	H	h	HL	L	WEIGHT
1/2"	108	121	140	13	-	55	73	151	200	10
3/4"x1/2"	117	130	152	13	19	55	73	151	200	11
3/4"	117	130	152	19	-	57	75	163	200	12
1"x3/4"	127	140	165	19	25	57	75	163	200	13
1"	127	140	165	25	-	79	80	170	200	18
1 1/2"x1"	165	178	190	25	38	79	80	170	200	20
1 1/2"	165	178	190	38	-	115,5	95,5	190	250	20
2"x1 1/2"	178	191	216	38	49	115,5	95,5	190	250	22
2"	178	191	216	49	-	121	101	235	250	23
3"x2"	203	216	283	49	74	121	101	235	250	28
3"	203	216	283	74	-	142	123	250	300	40
4"x3"	229	241	305	74	100	142	123	250	300	48
4"	229	241	305	100	-	177	153	300	300	65
6"x4"	394	406	457	100	150	177	153	300	300	95
6"	394	406	457	150	-	220	258	GEAR	GEAR	149
8"x6"	457	470	521	150	201	220	258	GEAR	GEAR	158
8"	457	470	521	201	-	264,5	268	GEAR	GEAR	251,5
10"x8"	533	546	559	201	252	264,5	268	GEAR	GEAR	290
10"	533	546	559	252	-	308	309	GEAR	GEAR	425
12"x10"	610	622	635	252	303	308	309	GEAR	GEAR	485
12"	610	622	635	303	-	342	288	GEAR	GEAR	590
14"x10"	686	699	762	252	334	308	309	GEAR	GEAR	530
14"	686	699	762	334	-	364,5	323	GEAR	GEAR	768
16"x12"	762	775	838	303	385	342	288	GEAR	GEAR	750
16"	762	775	838	385	-	405,5	389	GEAR	GEAR	1114,5
18"x14"	864	876	914	334	436	364,5	323	GEAR	GEAR	950
18"	864	876	914	436	-	448	421	GEAR	GEAR	1483,5
20"x16"	914	927	991	385	487	405,5	389	GEAR	GEAR	1295
20"	914	927	991	487	-	494,5	460	GEAR	GEAR	1999
24"x20"	1067	1080	1143	487	589	494,5	460	GEAR	GEAR	2300
24"	1067	1080	1143	589	-	572	554	GEAR	GEAR	3364
26"	1143	Nota 2	1245	633	-	664	635	GEAR	GEAR	3840
28"x24"	1245	Nota 2	1346	589	684	572	554	GEAR	GEAR	3650
28"	1245	Nota 2	1346	684	-	708	670	GEAR	GEAR	4540
30"	1295	Nota 2	1397	735	-	749	714	GEAR	GEAR	5340
32"	1372	Nota 2	1524	779	-	800	760	GEAR	GEAR	6690
34"	1473	Nota 2	1626	830	-	830	795	GEAR	GEAR	7830
36"	1524	Nota 2	1727	874	-	837	800	GEAR	GEAR	8960
40"	1753	Nota 2	1956	976	-	900	910	GEAR	GEAR	12560
42"	1855	Nota 2	2083	1020	-	978	1021	GEAR	GEAR	14280
48"	2134	Nota 2	2388	1166	-	1097	1066	GEAR	GEAR	21900

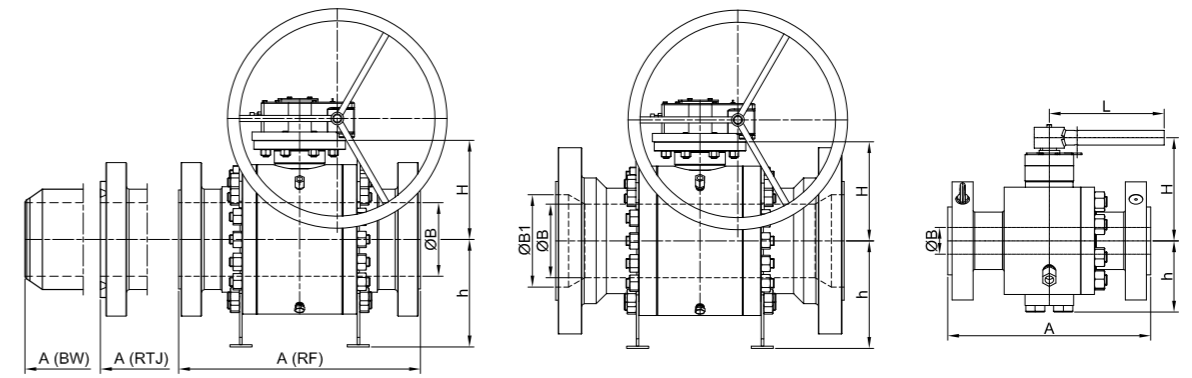
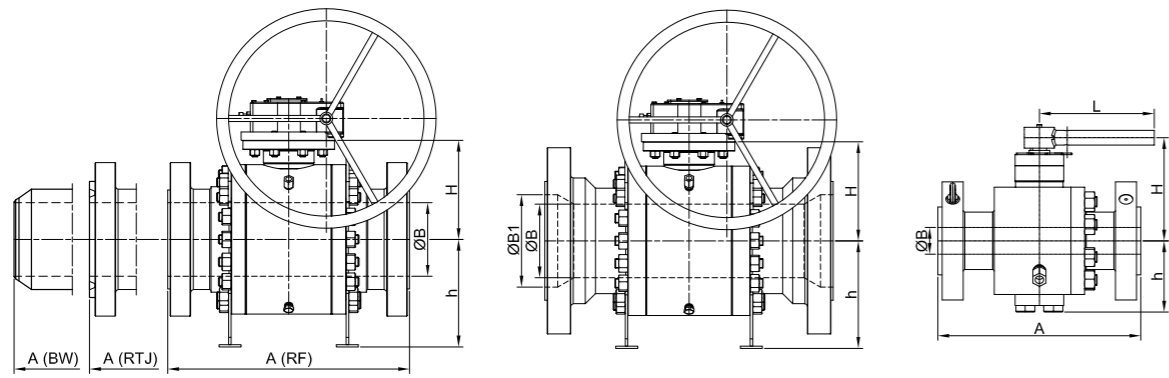
Dimensions are in mm, weight in Kilos.

ASME CLASS 300

SIZE	A-RF	A-RTJ	A-BW	B	B1	H	h	HL	L	WEIGHT
1/2"	140	151	140	13	-	55	73	151	200	12
3/4"x1/2"	152	165	152	13	19	55	73	151	200	13
3/4"	152	165	152	19	-	57	75	163	200	14
1"x3/4"	165	178	165	19	25	57	75	163	200	15
1"	165	178	165	25	-	79	80	170	200	22
1 1/2"x1"	190	203	190	25	38	79	80	170	200	24
1 1/2"	190	203	190	38	-	115,5	95,5	190	250	24
2"x1 1/2"	216	232	216	38	49	115,5	95,5	190	250	25
2"	216	232	216	49	-	121	101	235	250	25
3"x2"	283	298	283	49	74	121	101	235	250	42
3"	283	298	283	74	-	142	123	250	300	46
4"x3"	305	321	305	74	100	142	123	250	300	62
4"	305	321	305	100	-	177	153	300	300	93
6"x4"	403	419	457	100	150	177	153	300	300	115
6"	403	419	457	150	-	220	258	GEAR	GEAR	172
8"x6"	502	518	521	150	201	220	258	GEAR	GEAR	196
8"	502	518	521	201	-	264,5	268	GEAR	GEAR	286
10"x8"	568	584	559	201	252	264,5	268	GEAR	GEAR	342,5
10"	568	584	559	252	-	308	309	GEAR	GEAR	467
12"x10"	648	664	635	252	303	308	309	GEAR	GEAR	547
12"	648	664	635	303	-	353	335	GEAR	GEAR	738,5
14"x10"	762	778	762	252	334	308	309	GEAR	GEAR	660
14"	762	778	762	334	-	375,5	386,5	GEAR	GEAR	983
16"x12"	838	854	838	303	385	353	335	GEAR	GEAR	910
16"	838	854	838	385	-	422	446	GEAR	GEAR	1434
18"x14"	914	930	914	334	436	375,5	386,5	GEAR	GEAR	1210
18"	914	930	914	436	-	469	470	GEAR	GEAR	1886,5
20"x16"	991	1010	991	385	487	422	446	GEAR	GEAR	1660
20"	991	1010	991	487	-	513	483	GEAR	GEAR	2413,5
22"x18"	1092	1114	1092	436	538	469	470	GEAR	GEAR	2153
24"x20"	1143	1165	1143	487	589	513	483	GEAR	GEAR	2940
24"	1143	1165	1143	589	-	611	599	GEAR	GEAR	4177
26"	1245	1270	1245	633	-	664	630	GEAR	GEAR	4380
28"x24"	1346	1372	1346	589	684	611	599	GEAR	GEAR	4250
28"	1346	1372	1346	684	-	708	673	GEAR	GEAR	5300
30"	1397	1422	1397	735	-	745	715	GEAR	GEAR	6233
32"	1524	1553	1524	779	-	770	751	GEAR	GEAR	7420
34"	1626	1654	1626	830	-	815	795	GEAR	GEAR	8330
36"	1727	1756	1727	874	-	862	815	GEAR	GEAR	9160
40"	1956	Nota 2	1956	976	-	900	920	GEAR	GEAR	13775
42"	2083	Nota 2	2083	1020	-	1027	1060	GEAR	GEAR	19500
48"	2169	Nota 2	2169	1166	-	1197	1163	GEAR	GEAR	27500

Valves up to DN 8x6" are trunnion supported, valves DN 8" and above have supporting plate.

Dimensions are in mm, weight in Kilos.



ASME CLASS 600

SIZE	A-RF	A-RTJ	A-BW	B	B1	H	h	HL	L	WEIGHT
1/2"	165	165	165	13	-	55	73	151	200	12
3/4"x1/2"	190	190	190	13	19	55	73	151	200	14
3/4"	190	190	190	19	-	57	75	163	200	17
1"x3/4"	216	216	216	19	25	57	75	163	200	18
1"	216	216	216	25	-	79	80	170	200	26
1 1/2"x1"	241	241	241	25	38	79	80	170	200	28
1 1/2"	241	241	241	38	-	115,5	95,5	190	250	31
2"x1 1/2"	292	295	292	38	49	115,5	95,5	190	250	33
2"	292	295	292	49	-	121	101	235	300	38
3"x2"	356	359	356	49	74	121	101	235	300	44
3"	356	359	356	74	-	142	123	250	300	63
4"x3"	432	435	432	74	100	142	123	250	300	85
4"	432	435	432	100	-	182,5	195,5	GEAR	GEAR	115
6"x4"	559	562	559	100	150	182,5	195,5	GEAR	GEAR	169
6"	559	562	559	150	-	220	258	GEAR	GEAR	261
8"x6"	660	664	660	150	201	220	258	GEAR	GEAR	280
8"	660	664	660	201	-	270,5	293,5	GEAR	GEAR	415
10"x8"	787	791	787	201	252	270,5	293,5	GEAR	GEAR	534
10"	787	791	787	252	-	316	312	GEAR	GEAR	708
12"x10"	838	841	838	252	303	316	312	GEAR	GEAR	772
12"	838	841	838	303	-	367	364	GEAR	GEAR	1017,5
14"x10"	889	892	889	252	334	316	312	GEAR	GEAR	845
14"	889	892	889	334	-	394	403	GEAR	GEAR	1281
16"x12"	991	994	991	303	385	367	364	GEAR	GEAR	1245
16"	991	994	991	385	-	440	448	GEAR	GEAR	1898,5
18"x14"	1092	1095	1092	334	436	394	403	GEAR	GEAR	1590
18"	1092	1095	1092	436	-	493,5	478,5	GEAR	GEAR	2622
20"x16"	1194	1200	1194	385	487	440	448	GEAR	GEAR	2260
20"	1194	1200	1194	487	-	530,5	499,5	GEAR	GEAR	3202
22"x18"	1295	1305	1295	436	538	493,5	478,5	GEAR	GEAR	2974
24"x20"	1397	1407	1397	487	589	530,5	499,5	GEAR	GEAR	3560
24"	1397	1407	1397	589	-	634	599	GEAR	GEAR	5672
26"	1448	1461	1448	633	-	698	666	GEAR	GEAR	6727
28"x24"	1549	1562	1549	589	684	634	599	GEAR	GEAR	6200
28"	1549	1562	1549	684	-	753	711	GEAR	GEAR	8882
30"	1651	1664	1651	735	-	814	770	GEAR	GEAR	9692
32"	1778	1794	1778	779	-	825	785	GEAR	GEAR	10500
34"	1930	1946	1930	830	-	840	800	GEAR	GEAR	12240
36"	2083	2099	2083	874	-	938	895	GEAR	GEAR	14250
40"	2169	2169	2169	976	-	1072	1015	GEAR	GEAR	19190
42"	2437	2437	2437	1020	-	1127	1108	GEAR	GEAR	21356
48"	2435	2435	2435	1166	-	1183	1157	GEAR	GEAR	31195

Dimensions are in mm, weight in Kilos.

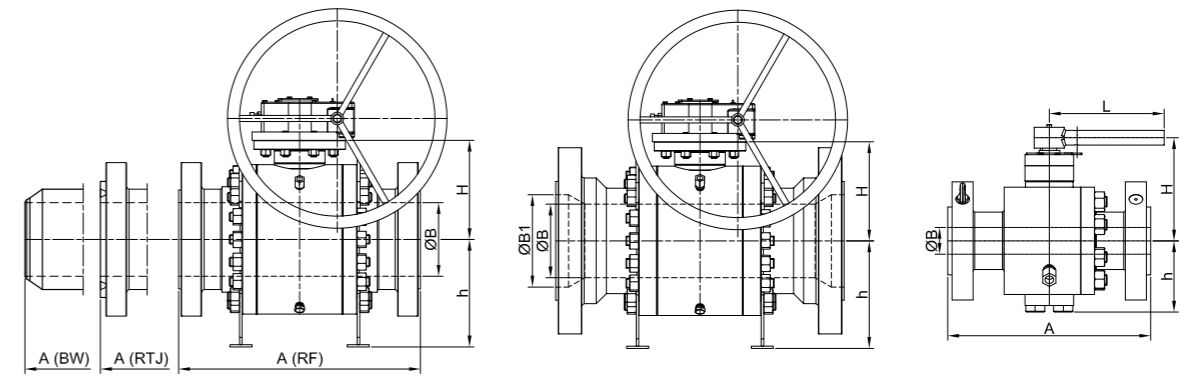
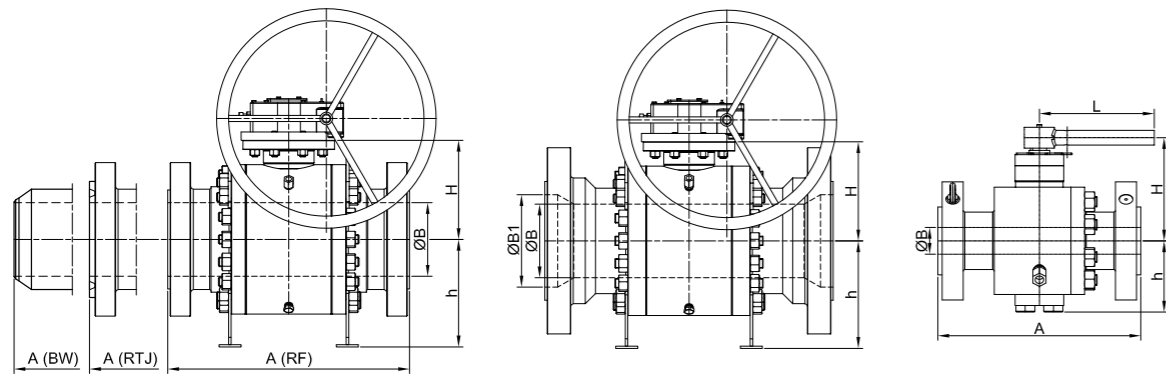
ASME CLASS 900

SIZE	A-RF	A-RTJ	A-BW	B	B1	H	h	HL	L	WEIGHT
1/2"	216	216	216	13	-	103	75	126	250	13
3/4"x1/2"	229	229	229	13	19	103	75	126	250	15
3/4"	229	229	229	19	-	103	75	126	250	16
1"x3/4"	254	254	254	19	25	103	75	126	250	20
1"	254	254	254	25	-	114	81	165	300	24
1 1/2"x1"	305	305	305	25	38	114	81	165	300	26
1 1/2"	305	305	305	38	-	150	114,5	173	400	43,5
2"x1 1/2"	368	371	368	38	49	150	114,5	173	400	56
2"	368	371	368	49	-	165,5	130	188,5	400	73,5
3"x2"	381	384	381	49	74	165,5	130	188,5	400	79
3"	381	384	381	74	-	180	153	250	450	84
4"x3"	457	460	457	74	100	180	153	250	450	110
4"	457	460	457	100	-	191	210	GEAR	GEAR	162
6"x4"	610	613	610	100	150	191	210	GEAR	GEAR	238
6"	610	613	610	150	-	230	268	GEAR	GEAR	340
8"x6"	737	740	737	150	201	230	268	GEAR	GEAR	436
8"	737	740	737	201	-	300	307	GEAR	GEAR	630
10"x8"	838	841	838	201	252	300	307	GEAR	GEAR	755
10"	838	841	838	252	-	342,5	350	GEAR	GEAR	1000
12"x10"	965	968	965	252	303	342,5	350	GEAR	GEAR	1140
12"	965	968	965	303	-	384,5	392	GEAR	GEAR	1440
14"x10"	1029	1038	1029	252	322	342,5	350	GEAR	GEAR	1320
14"	1029	1038	1029	322	-	395	425,5	GEAR	GEAR	1695
16"x12"	1130	1140	1130	303	373	384,5	392	GEAR	GEAR	1570
16"	1130	1140	1130	373	-	507	475	GEAR	GEAR	2150
18"x14"	1219	1232	1219	322	423	395	425,5	GEAR	GEAR	1930
18"	1219	1232	1219	423	-	550	517	GEAR	GEAR	3450
20"x16"	1321	1334	1321	373	471	507	475	GEAR	GEAR	2630
20"	1321	1334	1321	471	-	594	565	GEAR	GEAR	4250
24"x20"	1549	1568	1549	471	570	594	565	GEAR	GEAR	4250
24"	1549	1568	1549	570	-	652,5	676	GEAR	GEAR	7461,5
26"	1651	1673	Nota 2	617	-	710	680	GEAR	GEAR	8650
30"	1880	1902	Nota 2	712	-	810	780	GEAR	GEAR	11270
36"	2286	2315	Nota 2	855	-	920	910	GEAR	GEAR	18180

Valves up to DN 8x6" are trunion supported; valves DN 8" and above have supporting plate.

Dimensions are in mm, weight in Kilos.

Valves up to DN 8x6" are trunion supported; valves DN 8" and above have supporting plate.



ASME CLASS 1500

SIZE	A-RF	A-RTJ	A-BW	B	B1	H	h	HL	L	WEIGHT
1/2"	216	216	216	13	-	103	75	126	250	13
3/4"x1/2"	229	229	229	13	19	103	75	126	250	15
3/4"	229	229	229	19	-	103	75	126	250	16
1"x3/4"	254	254	254	19	25	103	75	126	250	20
1"	254	254	254	25	-	114	81	165	250	24
1 1/2"x1"	305	305	305	25	38	114	81	165	250	26
1 1/2"	305	305	305	38	-	150	114,5	173	400	43,5
2"x1 1/2"	368	371	368	38	49	150	114,5	173	400	56
2"	368	371	368	49	-	165,5	130	188,5	400	73,5
3"x2"	470	473	470	49	74	165,5	155	188,5	400	79
3"	470	473	470	74	-	180	155	GEAR	GEAR	110
4"x3"	546	549	546	74	100	180	189	GEAR	GEAR	139
4"	546	549	546	100	-	205	189	GEAR	GEAR	210
6"x4"	705	711	705	100	144	205	250	GEAR	GEAR	270
6"	705	711	705	144	-	261	250	GEAR	GEAR	495
8"x6"	832	841	832	144	192	261	290	GEAR	GEAR	586
8"	832	841	832	192	-	317	321	GEAR	GEAR	889
10"x8"	991	1000	991	192	239	317	321	GEAR	GEAR	1396
10"	991	1000	991	239	-	440,5	420	GEAR	GEAR	1902
12"x10"	1130	1146	1130	239	287	440,5	420	GEAR	GEAR	2050
12"	1130	1146	1130	287	-	451,5	440	GEAR	GEAR	2390
14"x10"	1257	1276	1257	239	315	440,5	420	GEAR	GEAR	2200
14"	1257	1276	1257	315	-	490	530	GEAR	GEAR	3000
16"x12"	1384	1407	1384	287	360	451,5	440	GEAR	GEAR	2910
16"	1384	1407	1384	360	-	555,5	530	GEAR	GEAR	3816
18"x14"	1537	1559	Nota 2	315	406	490	530	GEAR	GEAR	3410
18"	1537	1559	Nota 2	406	-	575	570	GEAR	GEAR	6150
20"x16"	1664	1686	Nota 2	360	454	555,5	554	GEAR	GEAR	5380
20"	1664	1686	Nota 2	454	-	696	680	GEAR	GEAR	9300
24"x20"	Nota 2	1972	Nota 2	454	546	696	680	GEAR	GEAR	11470
24"	Nota 2	1972	Nota 2	546	-	800	780	GEAR	GEAR	14550
26"	1943	Nota 2	Nota 2	594	-	950	875	GEAR	GEAR	15600

- Valves up to DN 8x6" are trunnion supported; valves DN 8" and above have supporting plate.
- Larger sizes (ASME Class) are available upon request.

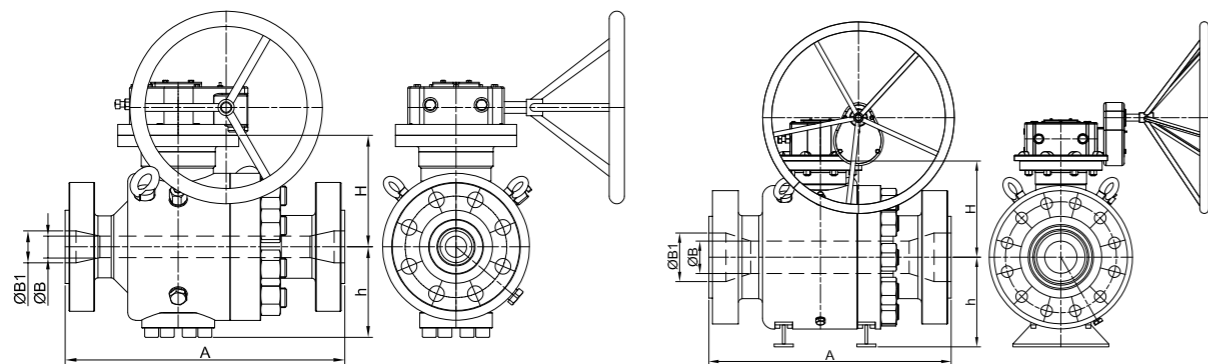
ASME CLASS 2500

SIZE	A-RF	A-RTJ	A-BW	B	B1	H	h	HL	L	WEIGHT
1/2"	264	264	264	13	-	102	74	125	250	19,5
3/4"x1/2"	273	273	273	13	19	102	74	125	250	20,5
3/4"	273	273	273	19	-	105	77	128	250	21,5
1"x3/4"	308	308	308	19	25	105	77	128	250	26,5
1"	308	308	308	25	-	116	93	139	250	31,5
1 1/2"x1"	384	387	384	25	38	116	93	139	250	47
1 1/2"	384	387	384	38	-	142	120	260	400	62
2"x1 1/2"	451	454	451	38	42	142	120	260	400	75
2"	451	454	451	42	-	148	160	260	400	110
3"x2"	578	584	578	42	62	148	160	260	400	157
3"	578	584	578	62	-	205	180	GEAR	GEAR	218
4"x3"	673	683	673	62	87	205	180	GEAR	GEAR	260
4"	673	683	673	87	-	218	250	GEAR	GEAR	337
6"x4"	914	927	914	87	131	218	250	GEAR	GEAR	548
6"	914	927	914	131	-	335	347	GEAR	GEAR	1330
8"x6"	1022	1038	1022	131	179	335	347	GEAR	GEAR	1500
8"	1022	1038	1022	179	-	442	395	GEAR	GEAR	1969
10"x8"	1270	1292	1270	179	223	442	395	GEAR	GEAR	2260
10"	1270	1292	1270	223	-	494	461	GEAR	GEAR	2550
12"x10"	1422	1445	1422	223	265	494	461	GEAR	GEAR	3211
12"	1422	1445	1422	265	-	522	488	GEAR	GEAR	3872

- Valves up to DN 8x6" are trunnion supported; valves DN 8" and above have supporting plate.
- Larger sizes (ASME Class) are available upon request.

Dimensions are in mm, weight in Kilos.

Dimensions are in mm, weight in Kilos.



CLASS API 3000

SIZE	A	B	B1	H	h	WEIGHT
2" 1/16 x 1" 13/16	371	46,0	52,4	143	112	70
2" 1/16	371	52,4	-	165	112	80
3" 1/8 x 2" 1/16	384	52,4	79,4	165	140	110
3" 1/8	384	79,4	-	200	140	130
4" 1/16 x 3" 1/8	460	79,4	103,2	200	170	195
4" 1/16	460	103,2	-	210	170	250
5" 1/8 x 4" 1/16	613	103,2	130,2	210	258	685
5" 1/8	613	130,2	-	275	258	430
7" 1/16 x 6"	613	152,4	179,4	350	340	560
7" 1/16	714	179,4	-	350	340	600

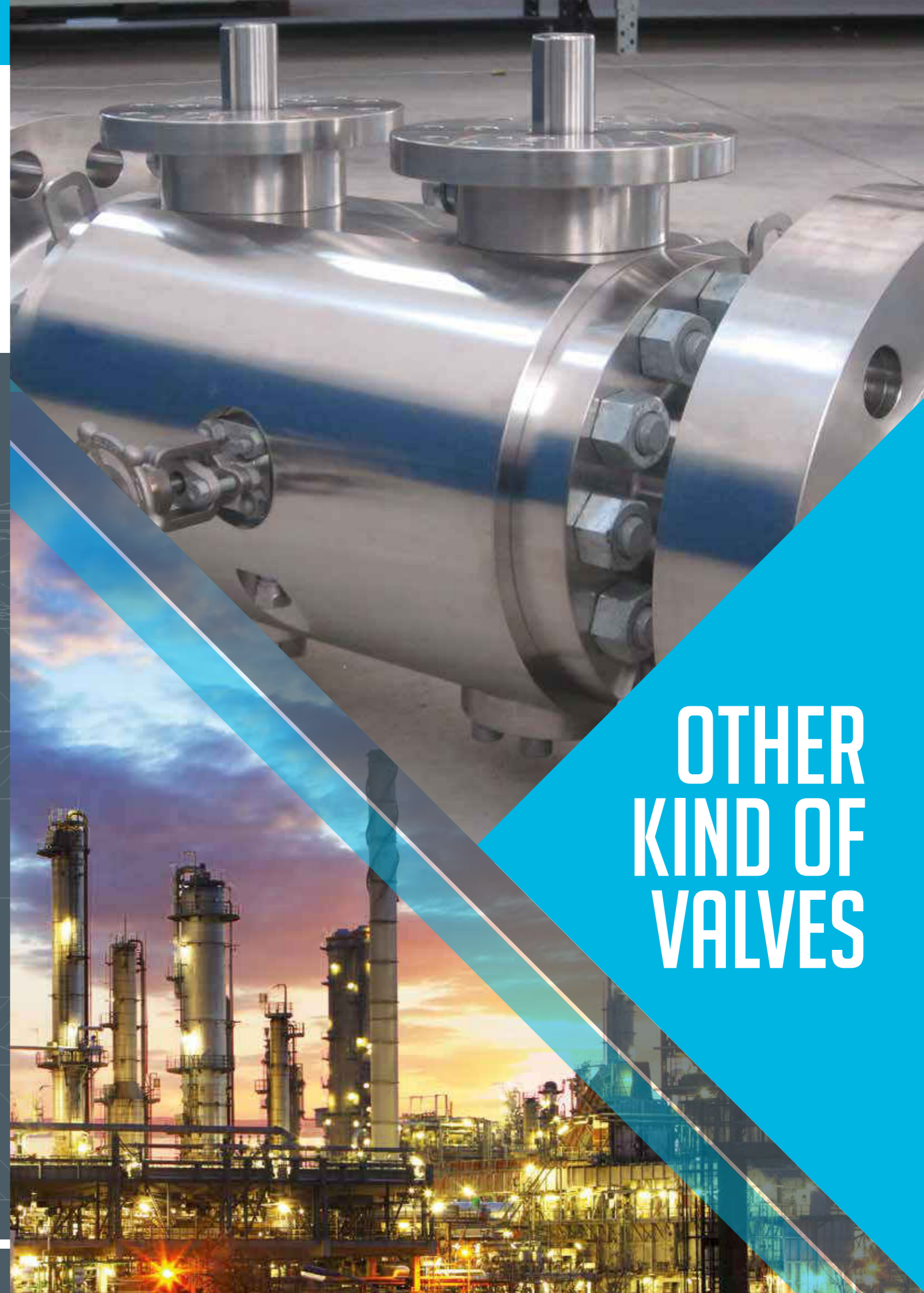
CLASS API 5000

SIZE	A	B	B1	H	h	WEIGHT
2" 1/16 x 1" 13/16	371	46,0	52,4	143	112	100
2" 1/16	371	52,4	-	165	112	120
3" 1/8 x 2" 1/16	473	52,4	79,4	165	140	180
3" 1/8	473	79,4	-	200	140	220
4" 1/16 x 3" 1/8	549	79,4	103,2	200	170	290
4" 1/16	549	103,2	-	210	170	350
5" 1/8	727	130,5	-	323	258	570
7" 1/16	841	179,4	-	374	386	800

CLASS API 10000

SIZE	A	B	B1	H	h	WEIGHT
1" 13/16	464	46,0	-	219	156	115
2" 1/16	521	52,4	-	236	169	190
2" 9/16	565	65,1	-	280	250	300
3" 1/16	619	77,8	-	306	280	390
4" 1/16	670	103,2	-	355	313	570
5" 1/8	737	130,2	-	352	327	852
7" 1/16 x 6" 3/8	889	161,9	179,4	375	327	1300
7" 1/16	889	179,4	-	375	327	1400

- Dimensions are in mm, weight in Kilos.
- Sferova API 15.000 are available upon request.

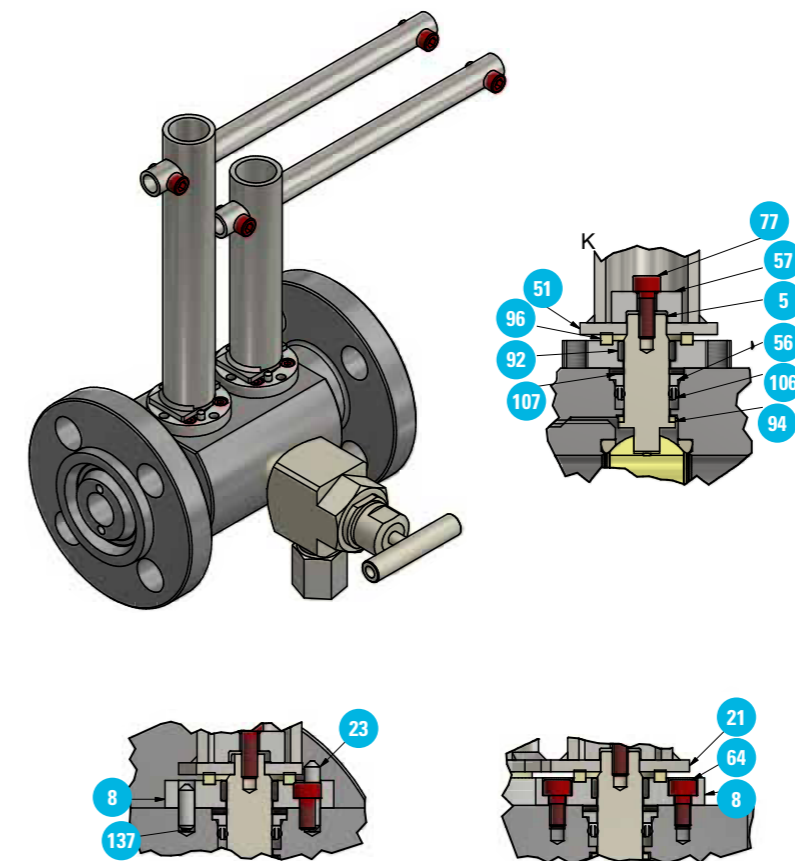
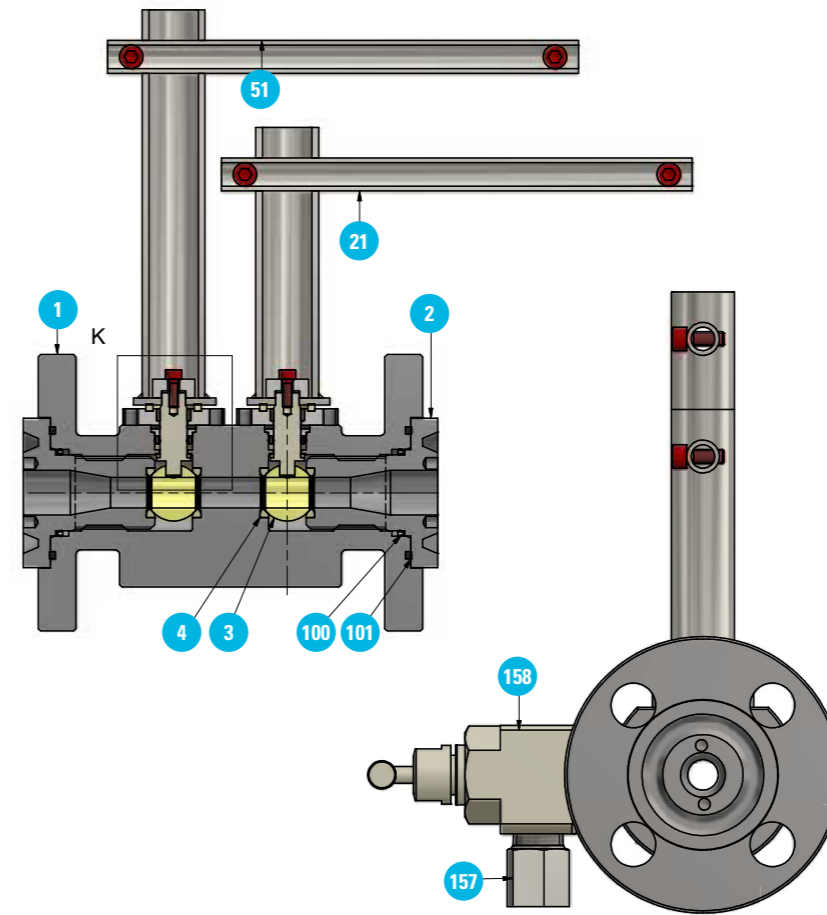
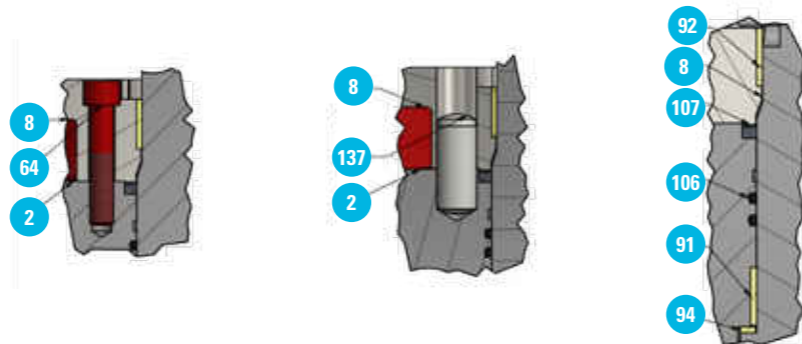
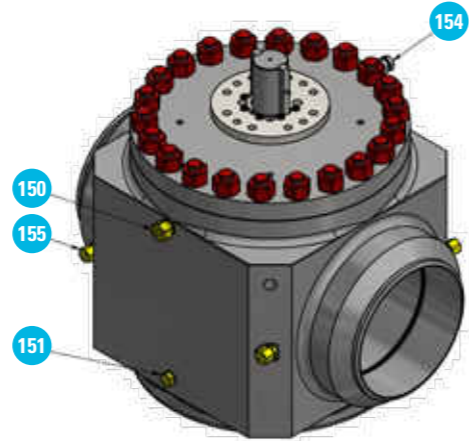
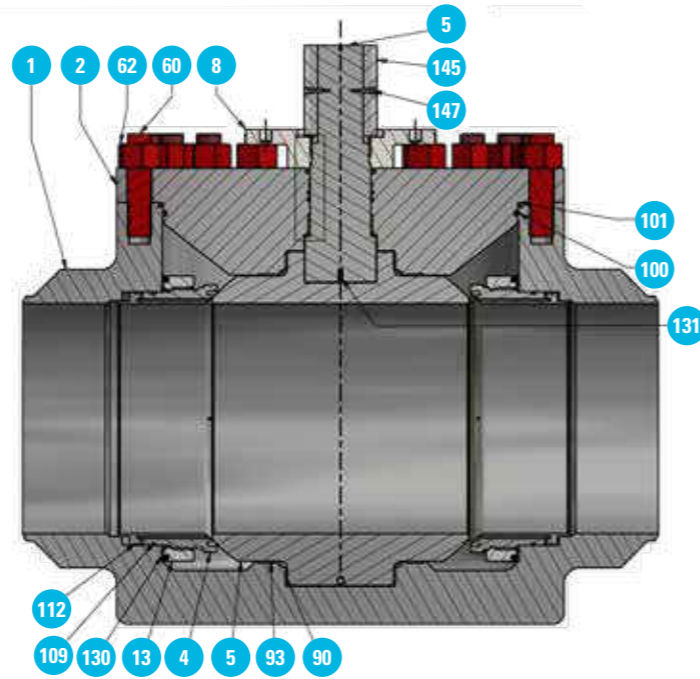


**OTHER
KIND OF
VALVES**

TEV

Trunnion mounted ball valves, construction to ASME B16.34-API6D, top entry body, double block & bleed, flanged RF/RTJ to ANSI B16.5 or BW ends to ASME B16.25, face to face to our std., full/reduced bore, ISO (5211) top work standardization for actuation, seat leakage rate to ISO 5208 Rate A, fire safe certified to BS 6755 Part II-API 607-API6FA, antistatic & blow out proof stem, self relieving seats, vent & drain.

* Metal seat optional



DBB

Floating & Trunnion mounted ball valves, double block and bleed modular design, construction to ASME B16.34 – ASME VIII Div. II, flanged, welded or clamp type ends, full/reduced bore, ISO (5211) top work standardization for actuation, seat leakage rate to ISO 5208 Rate A, fire safe certified to BS 6755 Part II-API 607-API6FA, antistatic & blow out proof stem.

* Metal seat optional

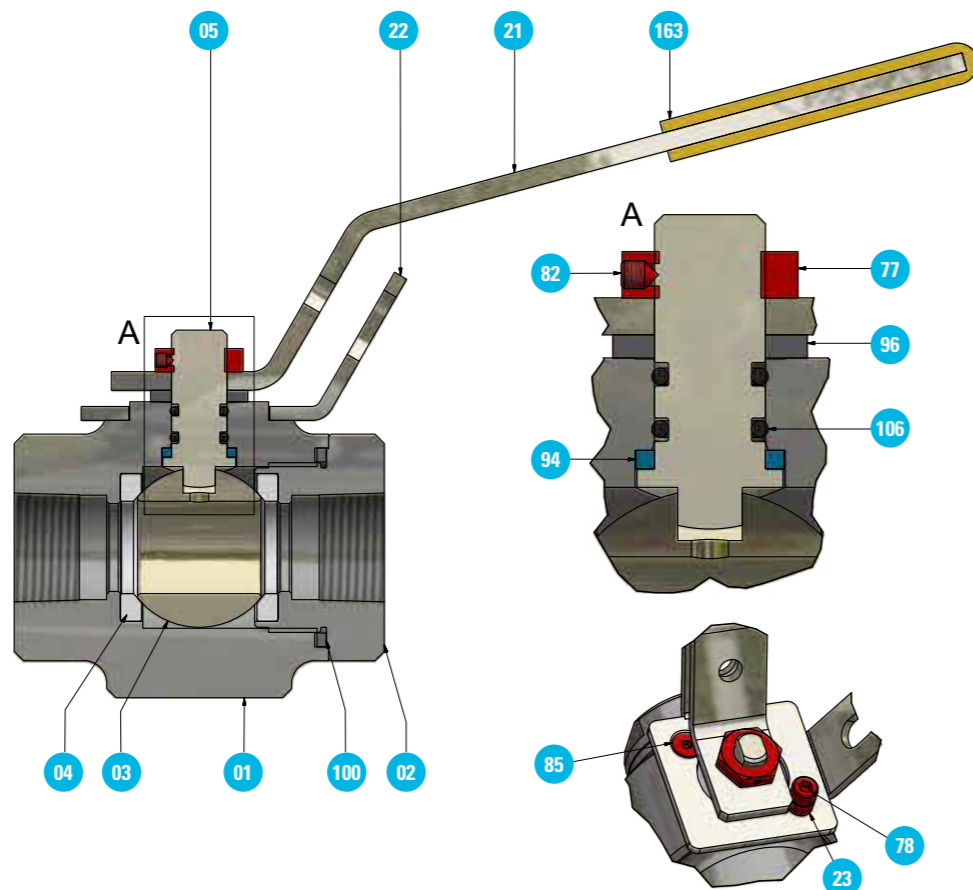


POS.	DESCRIPTION
01	BODY
02	BONNET
03	BALL
04	SEAT
05	STEM
08	FLANGE
13	SPRING CARRIER
60	STUD BOLT
62	NUT
64	CAP SCREW
90	BEARING
91	BEARING
92	BEARING
93	THRUST WASHER
94	THRUST WASHER
100	O-RING
101	GASKET
106	O-RING
107	GASKET
109	O-RING
112	O-RING
130	SPRING
131	SPRING
137	PIN
145	KEY
147	CAP SCREW
150	BLEEDER
151	PLUG
154	INJECTION
155	INJECTION
156	CHECK VALVE

POS.	DESCRIPTION
01	BODY
02	CLOSURE
03	BALL
04	SEAT
05	STEM
08	FLANGE
16	GASKET STEM SPACER
21	T-LEVER
23	PIN
51	SECOND T-LEVER
57	LEVER STOP
64	CAP SCREW
77	CAP SCREW
92	BEARING
94	GASKET
96	GASKET
100	LIP-SEAL
101	GASKET
106	LIP-SEAL
107	GASKET
137	PIN
157	BLEEDER
158	NEEDLE VALVE

TQT/TQT-INT

Floating ball valves, construction to ISO 17292, one piece threaded body joint, end entry, with screwed GAS ends to BSPP-UNI 338 – with screwed NPT F ends to ASME B1.20.1 - SW ends to ASME B16.11 or '-INT' version complete with no. 2 long integral nipples (L=100mm/each) PE or BW to ASME B16.25, full bore, face to face to our std., ISO (5211) top work standardization for actuation, seat leakage rate to ISO 5208 Rate A, antistatic & blow out proof stem.



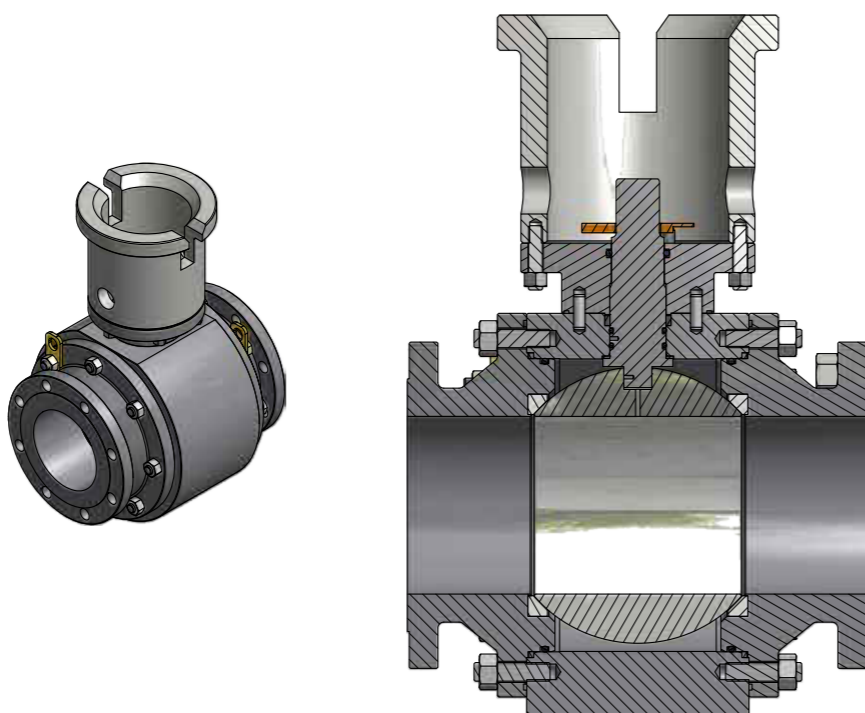
TM3/FW

Fully welded ball valves for underground service

Trunnion mounted ball valves, construction to ASME B16.34 – ASME VIII Div.II – API 6D, fully welded body, flanged RF/RTJ to ANSI B16.5 or BW ends to ASME B16.25, face to face to ANSI B16.10, full/reduced bore, ISO (5211) top work standardization for actuation, seat leakage rate to ISO 5208 Rate A, fire safe certified to BS 6755 Part II-API 607-API6FA, antistatic & blow out proof stem.

SUBSEA

Sferova subsea ball valve series are designed in full accordance with API Spec.6DSS latest edition. Sferova can also provide the product with API 6DSS monogram and qualified according to validation type test, including hyperbaric test, which can be performed in house. Subsea valves can be supplied in a wide range of materials and configurations to satisfy Customer's requirements and applications and can be manually operated (by ROV or by diver) or actuated.



TB

Bottom outlet ball valves TBP or TBS model

Bottom outlet Floating ball valves, one-piece body with screwed insert, upper flange oversized, lower flange STD, face to face to our std., full bore, seat leakage rate to EN12266-1 Rate A, design with perpendicular stem or slanting stem.

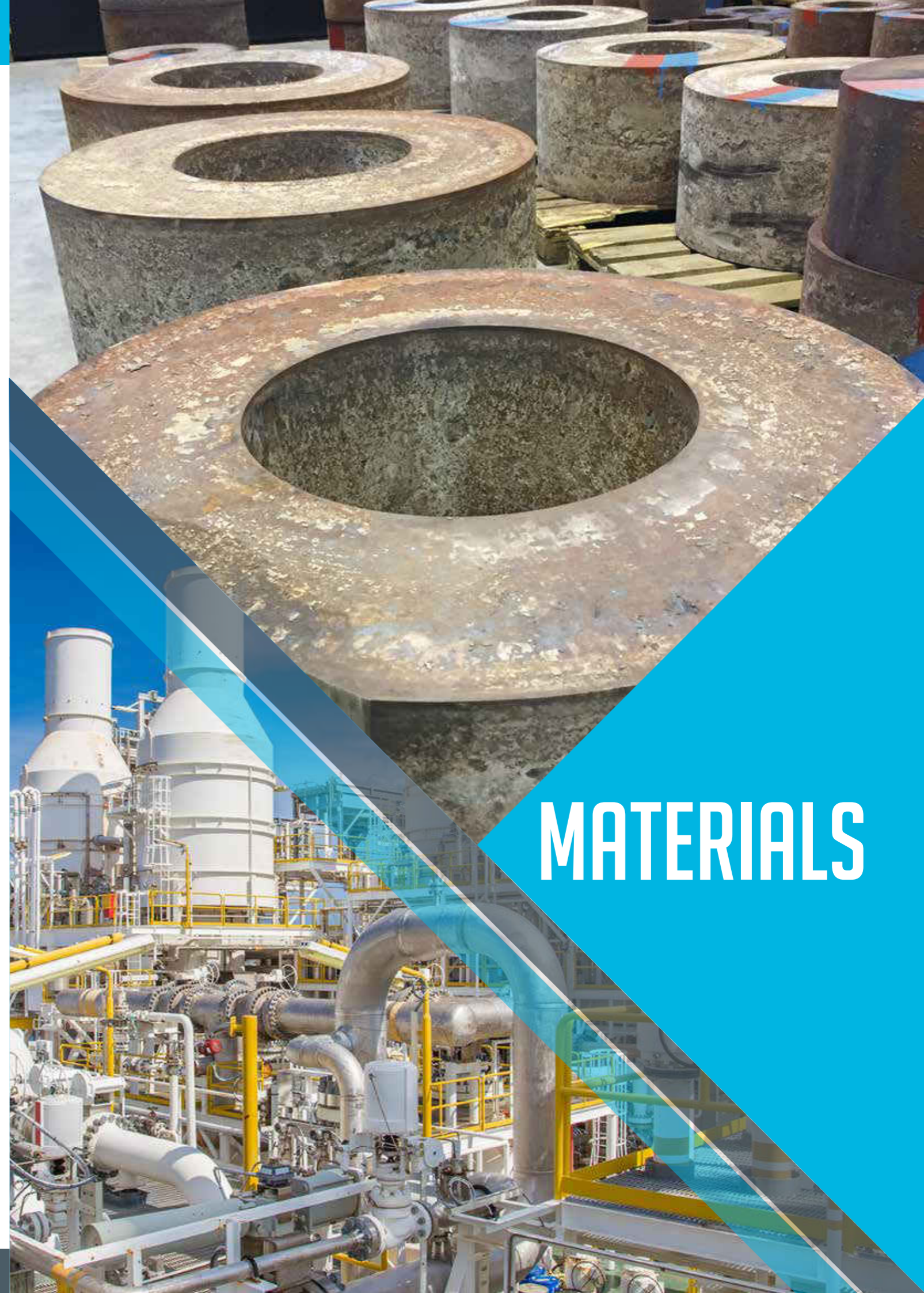
AUTOMATED VALVES

All our ball valves can be fitted with every kind of actuators & brands. We can follow customer's requirements in terms of actuators selection & accessories. Complete system (valve + actuator) can be tested and certified according to project's requirements.



▶ ALL OUR BALL VALVES CAN BE FITTED WITH

- ✓ Single acting pneumatic actuator
- ✓ Double acting pneumatic actuator
- ✓ Spring return system (dead man)
- ✓ Motor operated system
- ✓ Gas over oil actuator
- ✓ Line break system
- ✓ Positioner
- ✓ Manual Override
- ✓ Fire proof actuator system
- ✓ Digital partial stroking
- ✓ Box + Limit switches
- ✓ Solenoid valves
- ✓ Air filters
- ✓ Control panels



MATERIALS

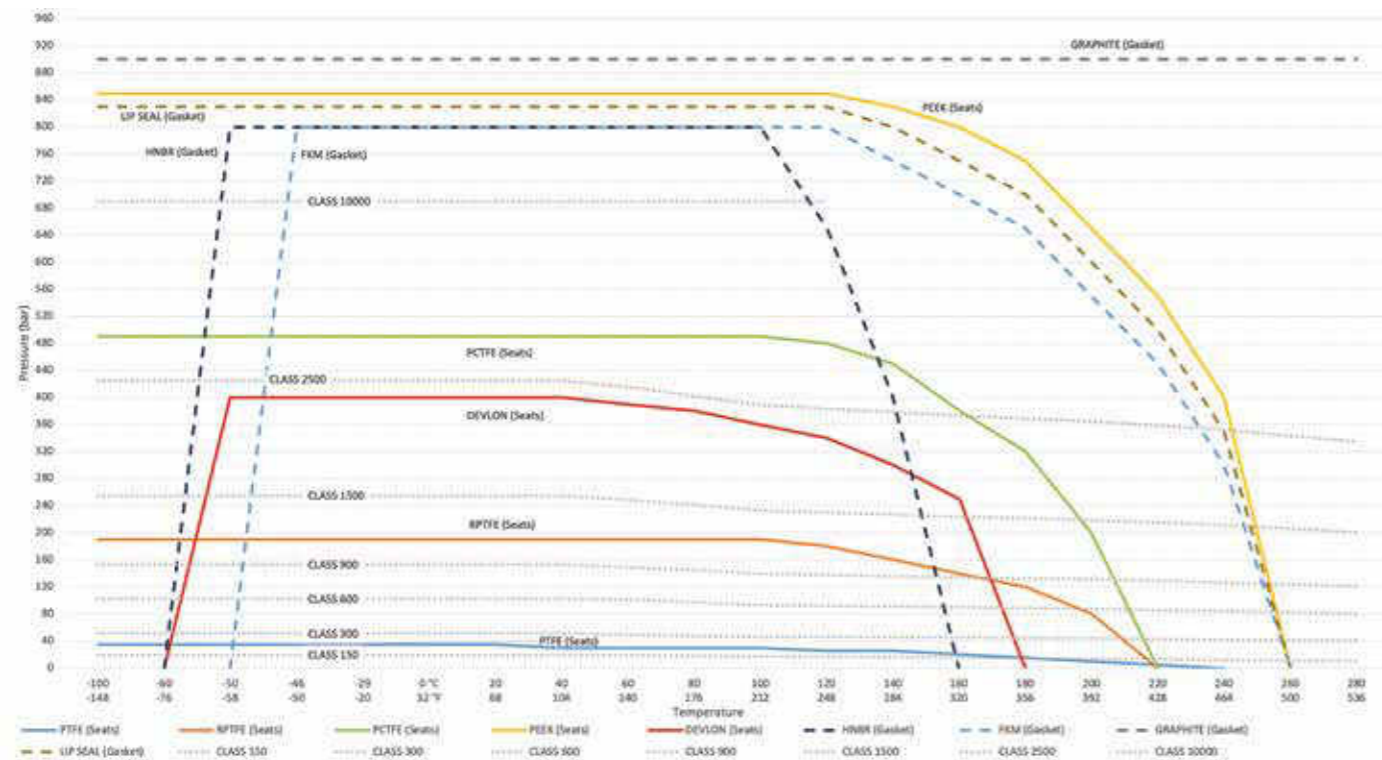
SOFT MATERIALS DATA

Specific and focused care is dedicated to seals and soft materials selection to better fit service conditions and valve performance required. Sferova strong knowledge is empowered through constant R&D activities and partnership with selected qualified suppliers. The analysis includes full compliance with customers requirements in terms of Suppliers and products qualification and certification level, which could in some cases achieve EN10204 type 3.2. Different configurations, different design, different materials are included in such technical and quality management practice.

GASKET MATERIALS			
NOME	T° MIN [°C]	T° MAX [°C] CONTINUOUS SERVICE*	T° MAX [°C] SHORT TERM ONLY
Lip-Seal (PTFE+ELGILOY)	-196	210	260
Graphite	-196	600	-
FKM modified	-60	200	250
FKM generic	-25	200	250
HNBR generic	-35	150	180
HNBR modified	-55	150	180
FFKM generic (Kalrez)	-15	250	320
FFKM modified (Kalrez)	-46	240	280

SEAT MATERIALS			
NOME	T° MIN [°C]	T° MAX [°C] CONTINUOUS SERVICE*	T° MAX [°C] SHORT TERM ONLY
PTFE	-196	200	260
RPTFE	-196	200	260
PCTFE (KEL-F)	-196	150	200
PEEK (RPEEK)	-196	230	260
Devlon	-50	170	200

► **PT CHART FROM CLASS 150 TO 2500 API 6D AND API6A 10000**



METALLIC MATERIALS		
NOME	T° MIN [°C]	T° MAX [°C]
A105	-29	535
LF2 (K03011)	-46	535
S41000 (410 - F6a)	-29	650
S41500 / S42400 (F6NM)	-60	370
S31600 (F316)	-196	815
S31603 (F316L)	-196	450
S31803 (F51)	-46	205
S32750 (F53)	-50	315
S32760 (F55)	-50	315
S31254 (F44)	-196	400
S20910 (F/XM-19)	-196	650
630 (17-4PH)	-101	345
N08825 (Incoloy 825)	-196	535
N07718 (Inconel 718)	-196	700
N07718 120K (Inconel 718)	-60	620
N06625 (Inconel 625)	-196	645
Ti Gr. 2 (B348)	-60	315

BOLTING MATERIALS		
NOME	T° MIN [°C]	T° MAX [°C]
A193 B7 / B7M	-29	535
A193 B8M Cl.1	-196	815
A194 2H / 2HM	-60	535
A194 Gr.7	-101	425
A194 Gr. 7M	-73	425
A194 Gr.8M / 8MA	-196	815
A320 B8M Cl.1	-196	425
A320 B8M Cl.2	-196	425
A320 L7	-101	425
A320 L7M	-73	425
A320 L43	-101	370
A453 660	-196	535
A468 Gr.5	-50	315

COATING		
NOME	T° MIN [°C]	T° MAX [°C]
TCC	-120	200
CCC	-120	550
ENP	-46	260

MATERIALS

- ✓ Carbon steel
- ✓ Carbon steel with Inc. 625 or 316 weld overlay
- ✓ Low temperature carbon steel (LF2/LF3)
- ✓ Stainless Steel
- ✓ Duplex
- ✓ Super-Duplex
- ✓ Special alloys
- ✓ Monel
- ✓ Inconel 625 / 825
- ✓ Hastelloy
- ✓ Al. Bronze
- ✓ Titanium





TEST

TESTING CAPABILITY

Sferova is able to meet the most challenging requirements of special qualification or production tests, in accordance with the most relevant international standards and customer specifications. Monitoring, control and recording are available during and post execution.

Sferova's testing capabilities include various pressure, temperature and mechanical cycles, combined or performed individually, as listed below:

- ✓ Functional test;
- ✓ Torque test;
- ✓ Antistatic test;
- ✓ High pressure gas test with N₂;
- ✓ Fugitive emission test with Helium (both qualification and production);
- ✓ Low temperature test;
- ✓ High temperature test;
- ✓ Cryogenic test;
- ✓ Flushing test;
- ✓ API Spec.6A PSL4;
- ✓ API Spec.6A PR2;
- ✓ API Spec.6A PR2F.



Multiple Stations Test Bench (Hydrostatic and Gas Test)



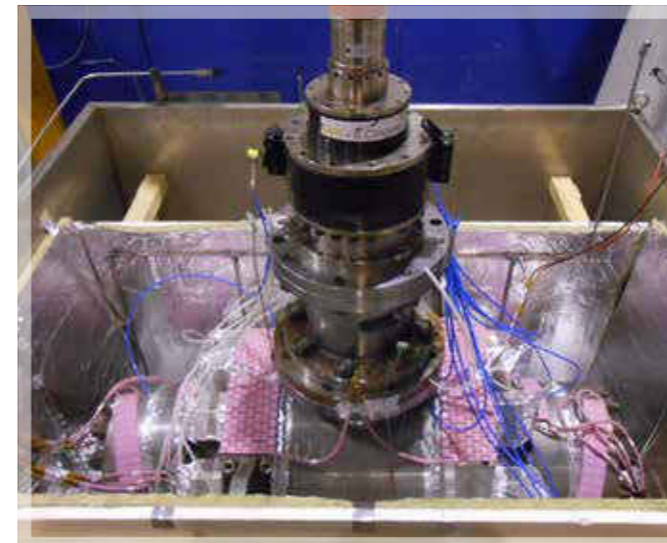
Actuator Flushing / NAS Cleaning



FET Prototype Test acc. to ISO 15158-1



Torque and Functional Test



API 6A PR2F Test



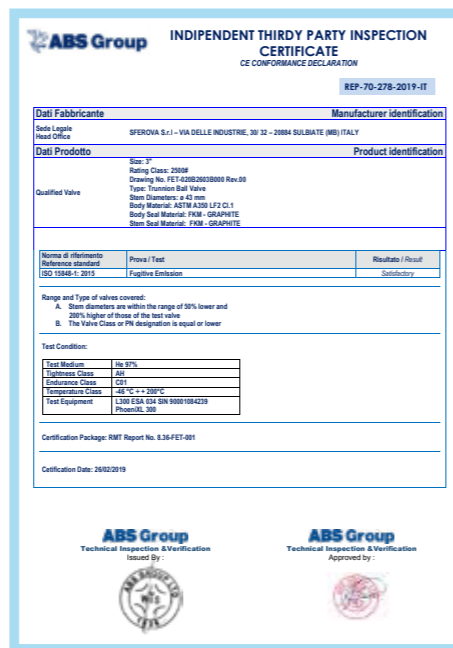
Valve & Actuator Factory Acceptance Test acc. to Client specification



Cryogenic Test

FUGITIVE EMISSIONS

- ✓ High experience in Fugitive Emission management of testing, both on qualification for type testing according to ISO15848-1 and on production acceptance testing according to ISO15848-2.
- ✓ Sferova has managed and performed in-house several Fugitive Emission Qualification Tests witnessed by Third Party Agency.
- ✓ 27 valve design qualified according to ISO15848-1, with different sealing system configuration:
 - ✓ O-ring sealing;
 - ✓ Lip seals;
 - ✓ Graphite sealing;
 - ✓ V-Pack sealing.
- ✓ Valve Pressure Classes Qualified:
 - ✓ From ANSI 150 to ANSI 2500;
 - ✓ Valve Stem Diameter Qualified:
 - ✓ From 5,98mm to 76,5mm for Floating Ball Valves;
 - ✓ From 10mm to 150mm for Trunnion Mounted Ball Valves.
- ✓ Temperature Classes Qualified:
 - ✓ From -46°C to +400°C with full graphite sealing;
 - ✓ From -46°C to +200°C with lip seals;
 - ✓ From -29°C to +200°C with O-rings.
- ✓ Endurance Classes Qualified:
 - ✓ C01
 - ✓ C02
- ✓ Tightness Classes Qualified:
 - ✓ AH with FKM O-rings sealing;
 - ✓ BH with O-rings, Lip seals and graphite sealings.
- ✓ Management and execution in-house of Fugitive Emission on production valves: according to ISO15848-2 at higher pressures than ISO15848-2, based on customer request.



QUALITY CONTROL

Sferova Quality Control verifies and assures the conformity of each component, fully traceable and identified from BOM validation to final release. Qualified personnel have the equipment suitable to perform NDE inspection and special testing. 100% of Sferova production is tested and inspected according to API Spec. 6D before final release, as standard, or according to API Spec. 6DSS or API Spec. 6A as applicable. Sferova can manage and perform specific required NDE examinations according to procedures issued in compliance with applicable relevant standards. NDE capability is listed below.

- ✓ Ultrasonic test
- ✓ Magnetic particle control
- ✓ Dye penetrant inspection
- ✓ Roughness test
- ✓ Hardness test
- ✓ Positive material identification
- ✓ Visual control
- ✓ Dimensional control



SFEROVA BALL VALVES



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