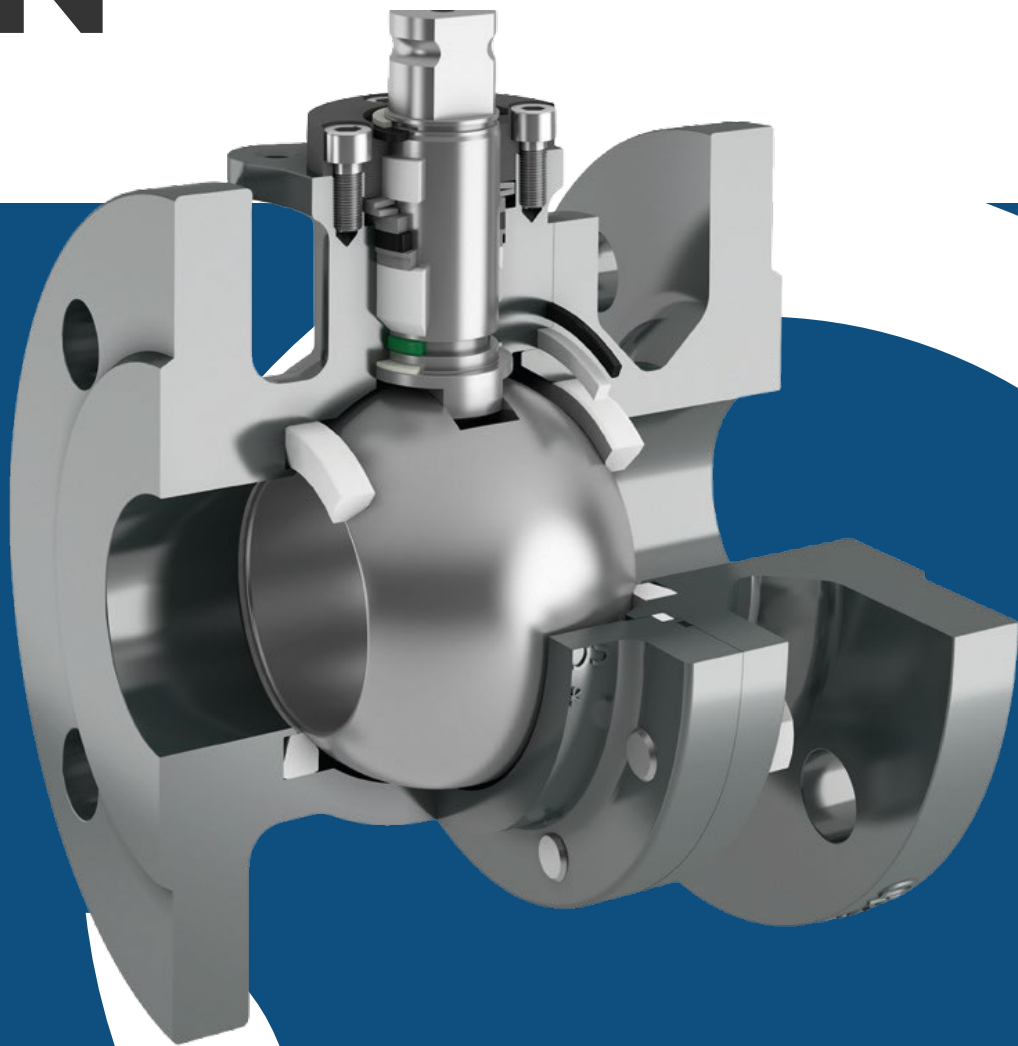


Ball Valves DIN





Certificates of the company

ISO 14001	Environmental Management System
ISO 9001	Quality Management system
API Monogram	API Q1 & API-6D
ISO 45001:2018	Health & Safety

Certificates of the product

DNV	Type approval
Lloyd's Register	Fire Safe & Type Approval
TÜV A352.09 AD Merkblatt A4	Design of the valves
TA - Luft ISO15848-1 + VDI2440	Stem Tightness for gas emissions
Helium -40 °C	Leeds University test
Directive 2014/68/EU	Pressure equipment directive (CE marking)
Directive 2014/34/EU	ATEX - directive (II2GD c T-)
BS 6364	Valves for Cryogenic Service -196°C
EN 161 / EN 23553 / EN 16678	Automatic quick shut-off valves for Gas/Oil burners and equipment
EAC	TR CU 010 - TR CU 012 - TR CU 032
Sanitary approval (Russian)	Food processing and Pharmaceutical industry
IEC 61508	SIL3 CAPABLE
UKR SEPRO	Ukraine Certificate
DVGW-EN 13774	Valves for gas distribution with MOP 16 bar
API 6D Monogram	Certificate N° 6D-0363
NSF International	ANSI 372
CRN Canada	Registration certificate for Canada

Certifications and tests

- Fire Safe
- Cryogenic Test
- Dimensional Control. 3D Arm

Main End Users

- BSA
- ADNOC
- ADGAS
- ADVARIO
- AIR LIQUIDE
- AKZO NOBEL
- ARCELORMITTAL
- ARCHROMA
- BAKER HUGHES
- BAPCO
- BOREALIS
- BOROUGE
- BORSODCHEM
- BUNGE
- CNPC
- CLARIANT
- DOLPHIN
- ENAGAS
- ENI
- ENPPI
- EXPRO
- FORMOSA
- GROUPEMENT - BERKINE SONATRACH -ANADARKO
- GROUPE METAL
- INA
- KOC
- KUWAIT PETROLEUM CORP.
- LINDE
- LOTOS
- MESSER
- MOL GROUP
- MOTOR OIL HELLASNESTE
- NESTLE
- OMV
- ORLEN
- PERENCO
- PETROLEUM DEVELOPEMENT OMAN L.L.C
- PETROM
- PETRONAS
- QATAR ENERGY
- RELIANCE INDUSTRIES LIMITED
- REPSOL
- ROMGAZ
- SASOL
- SIEMENS ENERGY
- SLOVNAFT
- SOLVAY
- SONATRACH
- SYENSQO
- SYNTHOS
- TAKREER
- TATA STEEL
- TVO
- VOPAK
- WÄRTSILÄ
- YARA
- YPF
- ZEECO



General Features

- Full / Reduced bore
- Soft / Metal seat
- Side Entry / Top Entry
- Bidirectional / Unidirectional
- Firesafe design
- Low emission design
- Anti static device
- Anti Blow out proof stem
- Autoadjustable packing / Maintenance free
- Self-cavity pressure relief
- Double block and bleed
- Spring loaded seat system
- Heating Jacket
- Degreased
- EC1935 / FDA Food Application
- Cavity Filler

Body constructions and design advantages

Floating ball	Integral seat, loaded seat, spring loaded seat, metal-metal seat option, cryogenic
Guided ball	Integral seat, metal O-ring seat
Full trunnion	Loaded seat, metal loaded seat, cryogenic, metal o-ring seat
Wafer	Integral seat, metal O-ring seat
3-4 Way Floating	Integral seat, 4 seats.
3-4 Way Trunnion	Loaded seat, metal loaded seat, cryogenic
Tank bottom	Integral seat, loaded seat, metal loaded seat, metal O-Ring seat, cryogenic

Further options and designs upon request

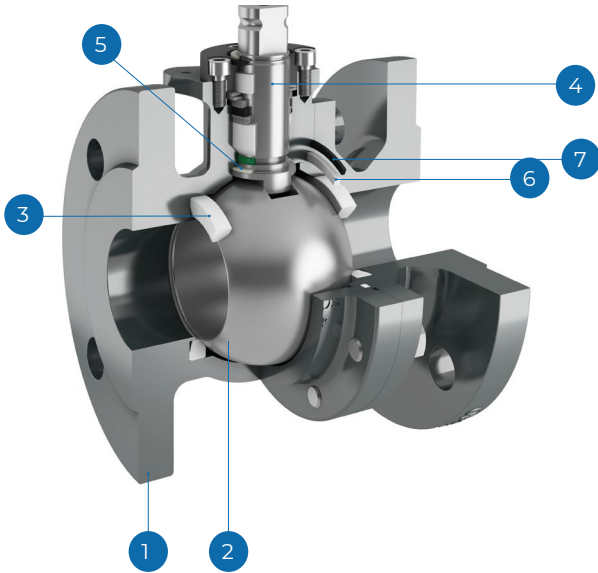
Standards

- Design EN-12516, ISO 17292
- Face to face EN 558
- End Flanges (EN 1092-1 & EN 1092-2), welded or threaded.
- Top flange ISO 5211
- Testing EN-12266, ISO 5208



FLOATING & GUIDED

PN16-40



Standard materials

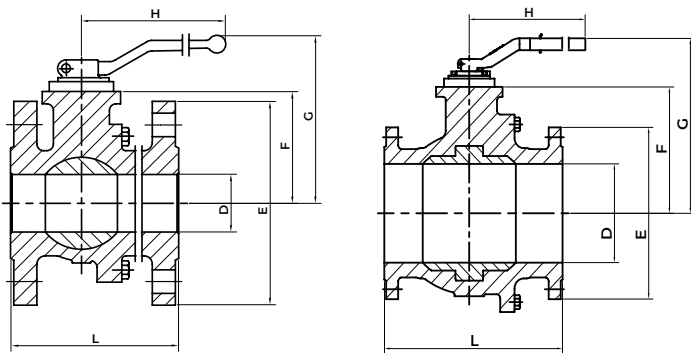
Item	Description	Figure*	
		Z04/09 TTT-G ZC04/09 TTT-G Z24/29 TTT-G	Z06/0F TTT-G ZC06 TTT-G Z26 TTT-G
1	Body	1.0619 / 1.6220	1.4408 / 1.4309
2	Ball	1.4408	
3	Seats	PTFE (T)	
4	Stem	1.4401	
5	Stem seal	PTFE (T) + FG (R)	
6	Body Seal 1	PTFE (T)	
7	Body Seal 2	Graphite	

* Other seats/seals configuration or material available upon request

Range

Z		ZG	
SIZE	RATING	SIZE	RATING
DN15-200	PN10-16	DN150-300	PN25-40
DN15-125	PN25-40	DN250-300	PN10-16

Dimensions



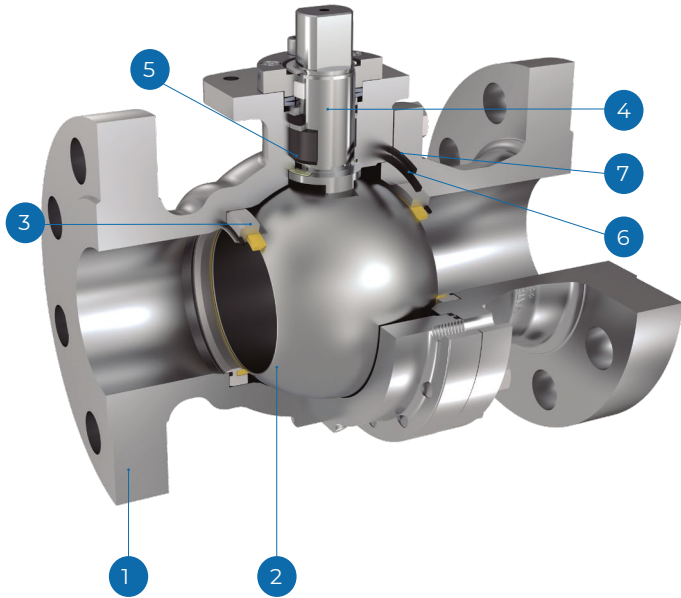
DN	D	L			E				F	G	H	ISO 5211
		F1 (1)	F4 (2)	F5 (3)	PN10	PN16	PN25	PN40				
15	15	130	115	-	-	95	-	95	51	108	185	F05/1
20	20	150	120	-	-	105	-	105	53	110	185	F05/1
25	25	160	125	-	-	115	-	115	59	116	185	F05/2
32	32	180	130	-	-	140	-	140	64	120	185	F05/2
40	40	200	140	-	-	150	-	150	75	145	293	F07
50	50	230	150	-	-	165	-	165	83	153	293	F07
65	65	290	170	-	-	185	-	185	96	166	293	F07
80	80	310	180	-	-	200	-	200	114	207	450	F10
100	100	350	190	-	-	220	-	235	128	222	450	F10
125	125	400	-	325	-	250	-	270	157	266	740	F12
150	150	480	-	350	-	285	-	300	176	285	740	F12
200	201	600	-	400	340	340	360	375	245	362	750	F14
250	252	-	-	450	395	405	425	450	285	-	-	F14
300	303	-	-	500	445	460	485	515	329	-	-	F14

(1) EN 558 serie 1 - (2) EN 558 serie 14 or 27 - (3) EN 558 serie 15 or 27.



FLOATING

PN63-100



Standard materials

Item	Description	Figure*	
		Z29 SSSG-ZV29 PSSG-	Z26 SSSG-ZV26 PSSG-
1	Body	1.6620	1.4408
2	Ball	1.4408	
3	Seats	PTFE (T) / PEEK	
4	Stem	XM-19	
5	Stem seal	PTFE (T) + CG / PEEK	
6	Body Seal 1	PTFE + CG	
7	Body Seal 2	Graphite	

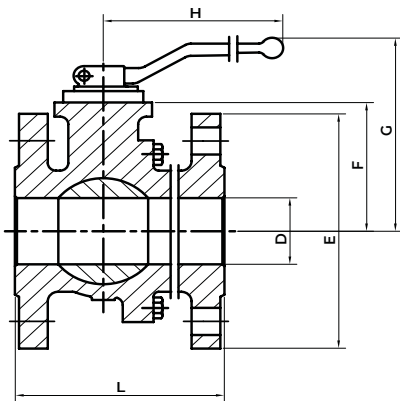
* Other seats/seals configuration or material available upon request

Range

Z	
SIZE	RATING
DN15-50	PN63-100

ZV	
SIZE	RATING
DN65-100	PN63
DN65-100	PN100

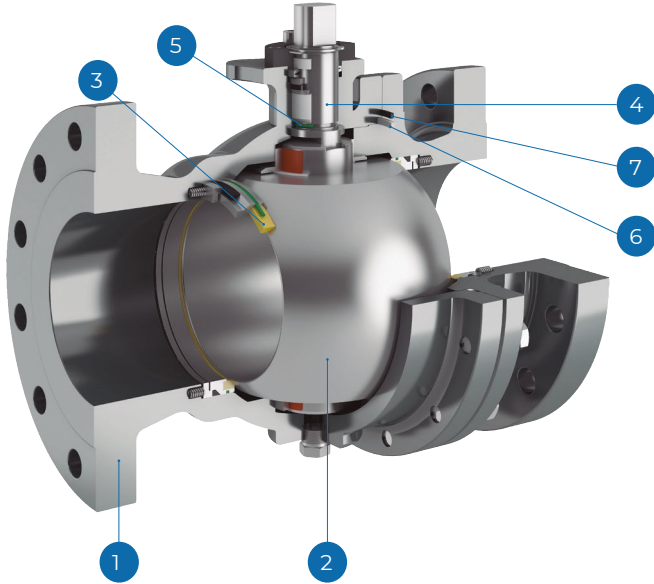
Dimensions



DN	D	L	E		F	G	H	ISO 5211
			F1	PN63 / PN100				
15	15	130		105	51	108	185	F05/1
20	20	150		130	53	110	185	F05/1
25	25	160		140	59	116	185	F05/2
32	32	180		155	64	120	185	F05/2
40	40	200		170	75	145	293	F07
50	50	230	180	195	83	153	293	F07
65	65	290	205	220	96	166	293	F07
80	80	310	215	230	113	207	450	F10
100	100	350	250	265	138	247	740	F12

FULL TRUNNION 2 PCS

PN10-40



Standard materials

Item	Description	Figure*	
		ZGS04/09 ZGS24	SSSG- SSSG- ZGS06 SSSG- ZGS26 SSSG-
1	Body	1.0619/1.6620	1.4408
2	Ball	1.4408	
3	Seats	PTFE +CG (S)	
4	Stem	1.4462	
5	Stem seal	PTFE +CG (S)	
6	Body Seal 1	PTFE +CG (S)	
7	Body Seal 2	Graphite	

* Other seats/seals configuration or material available upon request

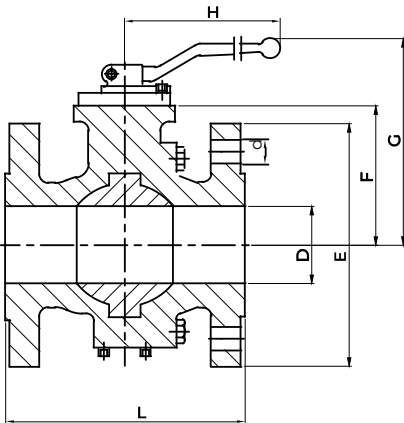
Range

ZGS

SIZE	RATING*
DN50-300	PN40

* Other ratings available upon request

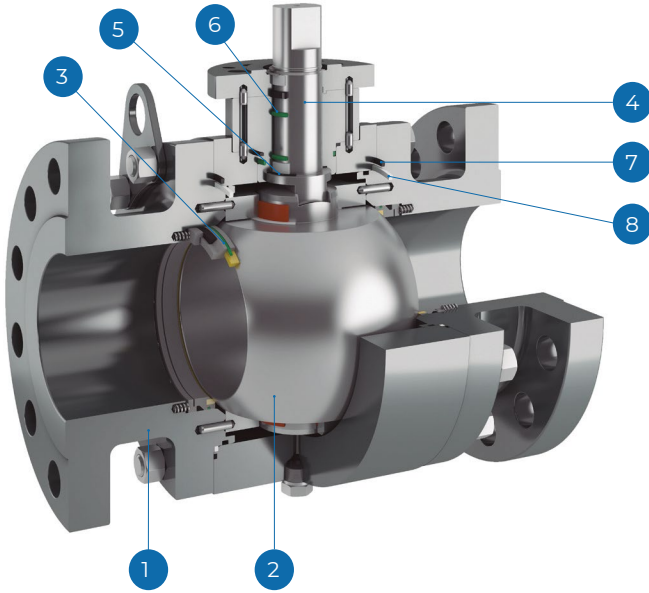
Dimensions



DN	D	L		E				F	G	H	ISO 5211
		F1	F5	PN10	PN16	PN25	PN40				
40	40	200	-	-	150	-	150	75	144	293	F07
50	50	230	-	-	165	-	165	83	153	293	F07
80	80	310	-	-	200	-	200	114	207	450	F10
100	100	350	-	-	220	-	235	128	222	450	F10
150	150	480	350	-	285	-	300	176	285	740	F12
200	201	600	400	340	340	360	375	245	362	750	F14
250	252	730	450	395	405	425	450	285	-	-	F14
300	303	850	500	445	460	485	515	329	-	-	F14

TRUNNION 3 PCS

PN10-16-25-40-63-100
PN160-250-400



Standard materials

Item	Description	Figure*	
		GKS04/09 SGSGV GKS24/29 SGSGV	GKS06 SGSGV GKS26 SGSGV
1	Body	1.0352	1.4401
2	Ball	1.4401	
3	Seat	PTFE + CG (S)	
4	Stem	1.4462	
5	Stem seal	Peek	
6	Stem Packing	Graphite + FKM	
7	Body Seal 1	PTFE + CG FKM	
8	Body Seal 2	Graphite	

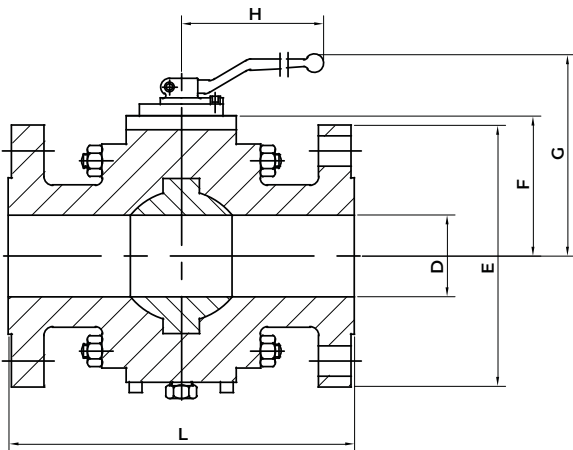
* Other seats/seals configuration or material available upon request

Range

GKS

SIZE	RATING
DN15-1050	PN10-100
DN15-800	PN160
DN15-600	PN250
DN15-450	PN400

Dimensions



TRUNNION 3 PCS

PN10-16-25-40-63

DN*	D					L				
	PN10	PN16	PN25	PN40	PN63	PN10	PN16	PN25	PN40	PN63
15	-	13	-	13	13	-	130	-	130	210
20	-	19	-	19	19	-	150	-	150	230
25	-	25	-	25	25	-	160	-	160	230
40	-	38	-	38	38	-	200	-	200	260
50	-	49	-	49	49	-	230	-	230	300
65	-	62	-	62	62	-	290	-	290	290
80	-	74	-	74	74	-	310	-	310	310
100	-	100	-	100	100	-	350	-	350	350
125	-	125	-	125	125	-	325	-	-	400
150	-	150	-	150	150	-	350	-	350	480
200	201	201	201	201	201	400	400	400	400	600
250	252	252	252	252	252	450	450	730	730	730
300	303	303	303	303	303	500	500	850	850	850
350	334	334	334	334	334	550	550	980	980	980
400	385	385	385	385	385	600	600	1100	1100	1100
450	436	436	436	436	436	650	650	1200	1200	1200
500	487	487	487	487	487	700	700	1250	1250	1250
600	589	589	589	589	589	1450	1450	1450	1450	1450

DN*	E								
	PN10	PN16	PN25	PN40	PN63	PN100	PN160	PN250	PN400
15	-	95	-	95	105	105	105	130	145
20	-	105	-	105	130	130	-	-	-
25	-	115	-	115	140	140	140	150	180
40	-	150	-	150	170	170	170	185	220
50	-	165	-	165	180	195	195	200	235
65	-	185	-	185	205	220	220	230	290
80	-	200	-	200	215	230	230	255	305
100	-	220	-	235	250	265	265	300	370
125	-	250	-	270	295	315	315	340	415
150	-	285	-	300	345	355	355	390	475
200	340	340	360	375	415	430	430	485	585
250	395	405	425	450	470	505	515	585	640
300	445	460	485	515	530	585	585	675	-
350	505	520	555	580	600	655	750	750	-
400	565	580	620	660	670	685	825	825	-
450	615	640	670	685	745	745	915	915	-
500	670	715	730	755	815	815	985	985	-
600	815	815	915	915	940	940	-	-	-

DN*	PN10				PN16				PN25				PN40				PN63			
	F	G	H	ISO 5211	F	G	H	ISO 5211	F	G	H	ISO 5211	F	G	H	ISO 5211	F	G	H	ISO 5211
15	-	-	-	-	68	125	185	F05	-	-	-	-	68	125	185	F05	68	125	185	F05
20	-	-	-	-	68	125	185	F05	-	-	-	-	68	125	185	F05	68	125	185	F05
25	-	-	-	-	68	125	185	F05	-	-	-	-	68	125	185	F05	68	125	185	F05
40	-	-	-	-	82	152	293	F07	-	-	-	-	82	152	293	F07	82	152	293	F07
50	-	-	-	-	98	168	293	F07	-	-	-	-	98	168	293	F07	98	168	293	F07
65	-	-	-	-	104	175	293	F07	-	-	-	-	104	175	293	F07	135	229	450	F10
80	-	-	-	-	131	225	450	F10	-	-	-	-	131	225	450	F10	131	225	450	F10
100	-	-	-	-	147	241	450	F10	-	-	-	-	147	241	450	F10	175	284	740	F12
125	-	-	-	-	-	-	-	F12	-	-	-	-	-	-	-	-	-	-	-	F12
150	-	-	-	-	210	-	-	F12	-	-	-	-	210	-	-	F12	229	-	-	F14
200	265	-	-	F14	265	-	-	F14	265	-	-	F14	265	-	-	F14	295	-	-	F16-1
250	301	-	-	F14	301	-	-	F14	301	-	-	F14	301	-	-	F14	330	-	-	F16-1
300	363	-	-	F16	363	-	-	F16	363	-	-	F16	363	-	-	F16	400	-	-	F25
350	393	-	-	F16	393	-	-	F16	393	-	-	F16	393	-	-	F16	426	-	-	F25
400	433	-	-	F16	433	-	-	F16	433	-	-	F16	433	-	-	F16	465	-	-	F25
450	500	-	-	F25	500	-	-	F25	500	-	-	F25	500	-	-	F25	511	-	-	F30
500	534	-	-	F25	534	-	-	F25	534	-	-	F25	534	-	-	F25	545	-	-	F30
600	619	-	-	F30	667	-	-	F30	667	-	-	F35	667	-	-	F35	667	-	-	F35

*Available up to DN1050 upon request



TRUNNION 3 PCS

PN100 - 160 - 250 - 400

DN	D				L			
	PN100	PN160	PN250	PN400	PN100	PN160	PN250	PN400
15	13	13	13	13	210	210	210	264
20	19	19	19	19	230	-	-	-
25	25	25	25	25	230	230	230	308
40	38	38	38	38	260	260	260	384
50	49	49	49	42	300	300	300	451
65	62	62	62	52	290	340	340	508
80	74	74	74	62	380	380	470	578
100	100	100	100	87	430	430	546	673
125	125	125	125	125	-	-	-	794
150	150	150	144	131	480	550	705	914
200	201	201	192	179	600	650	650	1022
250	252	252	239	223	730	775	991	1270
300	303	303	287	265	850	900	1130	1422
350	334	322	315	-	980	1025	1257	-
400	385	373	360	-	1100	1150	1384	-
450	436	423	406	-	1200	1275	1537	-
500	487	471	454	-	1250	1400	1664	-
600	589	-	-	-	1450	-	-	-

DN	PN63				PN100				PN160				PN250				PN400			
	F	G	H	ISO 5211	F	G	H	ISO 5211	F	G	H	ISO 5211	F	G	H	ISO 5211	F	G	H	ISO 5211
15	68	125	185	F05	68	125	185	F05	68	125	185	F05	68	125	185	F05	81	151	293	F07
20	68	125	185	F05	68	125	185	F05	68	125	185	F05	68	125	185	F05	81	151	293	F07
25	68	125	185	F05	68	125	185	F05	68	125	185	F05	68	125	185	F05	81	151	293	F07
40	82	152	293	F07	82	152	293	F07	82	152	293	F07	82	152	293	F07	102	196	450	F10
50	98	168	293	F07	98	168	293	F07	127	221	450	F10	127	221	450	F10	149	258	740	F12
65	135	229	450	F10	135	229	450	F10	135	229	450	F10	135	229	450	F10	179	288	740	F12
80	131	225	450	F10	131	225	450	F10	175	285	740	F12	175	285	740	F12	184	-	-	F14-1
100	175	284	740	F12	175	284	740	F12	200	-	-	F12	200	-	-	F14-1	225	-	-	F16-1
125	-	-	-	F12	-	-	-	F12	-	-	-	-	-	-	-	-	-	-	-	-
150	229	-	-	F14	229	-	-	F14	257	-	-	F14	257	-	-	F16-1	308	-	-	F25
200	295	-	-	F16-1	295	-	-	F16-1	347	-	-	F16-1	347	-	-	F25	368	-	-	F25
250	330	-	-	F16-1	330	-	-	F16-1	379	-	-	F16-1	379	-	-	F25	430	-	-	F30
300	400	-	-	F25	400	-	-	F25	420	-	-	F25	420	-	-	F25	471	-	-	F35
350	426	-	-	F25	426	-	-	F25	460	-	-	F25	460	-	-	F30-1	426	-	-	F25
400	465	-	-	F25	465	-	-	F25	542	-	-	F30-1	542	-	-	F35	465	-	-	F25
450	511	-	-	F30	511	-	-	F30	622	-	-	F30	622	-	-	F40	511	-	-	F30
500	545	-	-	F30	545	-	-	F30	657	-	-	F35	657	-	-	F40	545	-	-	F30
600	667	-	-	F35	667	-	-	F35	667	-	-	F35	667	-	-	F35	667	-	-	F35

Torque Values

Floating & Guided (Nm)

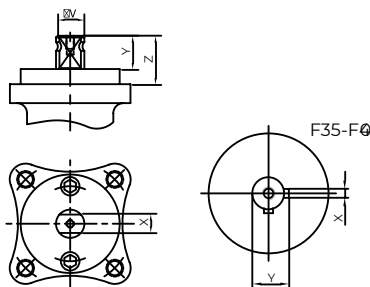
DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300
PN10	7	9	13	20	29	40	50	80	100	220	350	500	890	1100
PN16	8	10	14	21	31	46	55	85	110	240	380	540	950	1200
PN25	10	12	17	25	33	54	71	108	158	290	470	905	1290	1450
PN40	12	14	18	30	40	65	85	130	190	350	605	950	1235	1595
PN63	15	17	28	43	65	92	116	185	259					
PN100	16	18	40	61	90	156	170	260	349					

Trunnion (Nm)

DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600
PN10	8	12	20	30	40	55	93	130	223	294	364	568	777	975	1655	2237	2896	3490	4939	5607
PN16	9	13	22	33	44	59	101	142	241	328	414	645	873	1086	1844	2487	3315	4101	5718	6532
PN25	11	15	24	37	50	65	113	161	269	379	489	762	1016	1253	2128	2863	3945	5016	6888	7919
PN40	13	18	28	43	59	75	119	189	314	433	613	955	1256	1531	2597	3489	4992	6543	8837	10230
PN63	15	23	34	54	73	91	166	242	385	595	805	1253	1624	1957	3325	4449	6600	8884	11825	13751
PN100	20	31	44	70	95	112	203	294	501	805	1106	1750	2213	2639	4494	6020	9184	12460	16632	19440
PN160	27	41	58	92	126	151	282	420	644	1084	1523	2380	3010	3570	6073	8078	12670	17738	23128	-
PN250	41	61	85	136	189	217	420	616	956	1653	2352	3661	4606	5418	9226	12250	19670	27930	36121	-
PN400	64	96	131	211	291	333	649	965	1475	2617	3758	5853	7314	8569	-	-	-	-	-	-

Top Flange ISO5211

ISO 5211	F05/1	F05/2	F07	F10	F10-1	F12-1	F12	F14	F14-1	F16	F16-1	F25	F25-1	F30	F30-1	F35	F40
Ø V	14	18	22	28	22	28	36	48	36	60	48	72	60	98	72	120	180
X	11	14	17	22	17	22	27	36	27	46	36	55	46	75	55	32	45
Y	11	17	20	22	20	22	35	40	35	60	40	70	60	100	70	127	190
Z	13,5	19,5	30	40	25	36	50	63	44	73	63	83	68	106	83	200	200
I	M4	M4	M6	M8	M6	M8	M8	M10	M8	M10	M10	M10	M10	M12	M10	M16	M16



Mast (Nm)

STEM MATERIAL	F05/1	F05/2	F7/F10-1	F10/F12-1	F12/F14-1	F14/F16-1	F16	F25/F30-1	F30	F35	F40
1.4401	44	95	250	522	1073	2544	5049	8702	21974	13043	29212
1.4462	95	207	550	1147	2356	5585	11084	19103	48235	29160	64125
XM-19	81	175	464	968	1990	4716	9360	16131	40731	24624	54150

Kv Values (m3/h)

DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Kv (m3/h)	20	44	88	200	250	310	480	960	1700	2650	4100	8200	11500	18340	26300	30200	35400	54100	70300



Weights

Floating & Guided PN16-40 (Kg)

DN	F1(1)	F4(2)	F5(3)	G-BOX
15	3	3	-	-
20	4	4	-	-
25	5	5	-	-
32	7	6	-	-
40	9	8	-	3
50	13	11	-	3
65	20	17	-	3
80	26	22	-	3
100	34	30	-	3
125	68	-	56/62	15
150	94*	-	75/83	15
200	164	-	134/147	21
250	-	-	228/254	21
300	-	-	321/372	31

Floating & Guided PN63-100 (Kg)

DN	F1(1)	F4(2)	F5(3)	G-BOX
15	7	-	-	-
20	9	-	-	-
25	11	-	-	-
32	15	-	-	-
40	19	-	-	-
50	25	-	-	-
65	39	-	-	-

Trunnion 2 PCS (Kg)

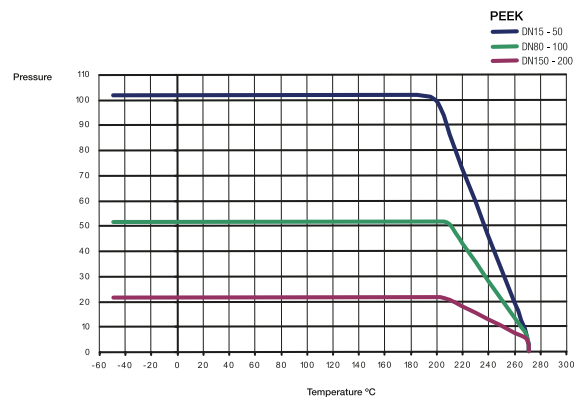
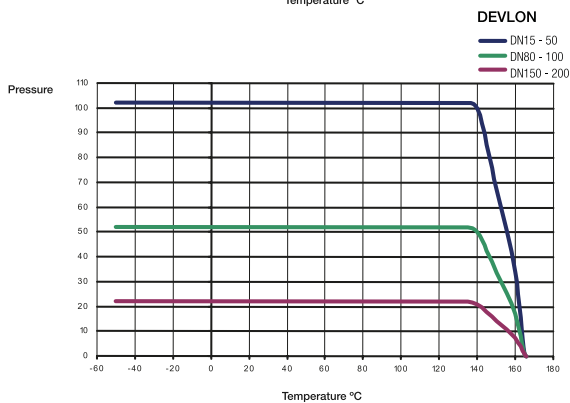
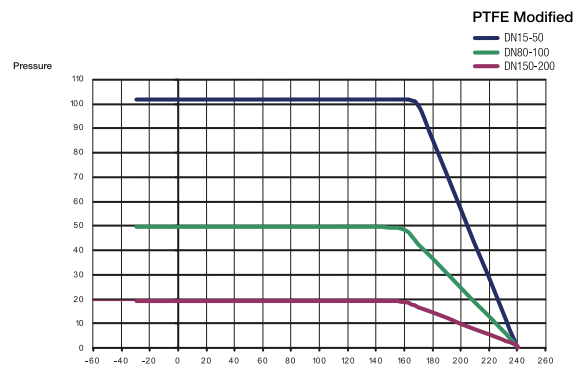
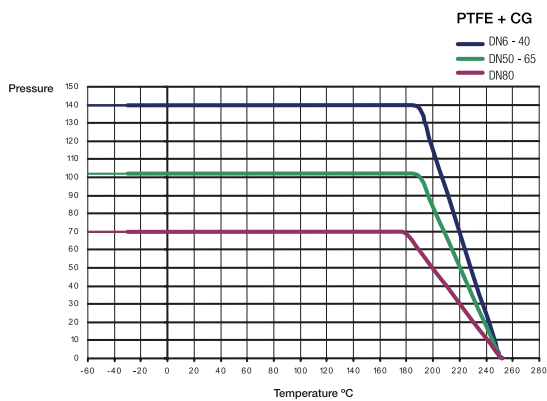
DN	F1(1)	F5(3)	G-BOX
50	17	-	-
65	38	-	-
80	60	-	-
100	70	56	15
125	110	77/83	15
150	194	134/147	21
200	335	228/254	21
250	491	321/372	21
300	-	321/372	31

Trunnion 3 PCS (Kg)

DN	PN 10	PN16	PN25	PN40	PN63	PN100	PN160	PN250	PN400
50		26	26	26	30	30	28	46	115
65		29	30	30	35	45	39	76	
80		33	34	34	38	63	98	102	208
100		69	72	72	87	103	153	169	340
125		97	97	-	128	158	-	-	-
150	124	128	128	139	169	212	353	360	712
200	213	220	220	240	298	378	595	605	1859
250	412	425	425	463	511	632	885	895	2817
300	548	565	565	616	729	880	1220	1230	3892
350	737	760	760	828	1085	1134	-	-	-
400	951	980	980	1068	1200	1696	-	-	-
450	1870	1870	1870	2038	-	-	-	-	-
500	2241	2310	2310	2516	-	2815	-	-	-
600	3870	3870	3580	3522	-	-	-	-	-

When one value is indicated, corresponds to PN40. When two values are indicated, the first correspond to PN16 and the second to PN40. * Weight only for PN16

Pressure - Temperature Graphs*



*Example of graphs for standard seats materials on Floating type valves.





DIN

From DN8 up to DN1050
 PN16 up to PN400
 T° Range from -196°C up to 650°C



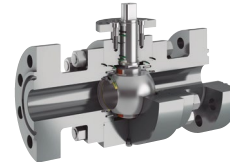
FLOATING & GUIDED



FLOATING 3PCS FORGED



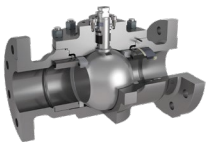
TRUNNION 2PC



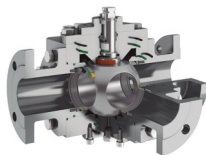
TRUNNION 3PC



FLOATING TOP ENTRY



TRUNNION TOP ENTRY



3&4 WAY



WAFER



TANK BOTTOM



METAL SEATED



CRYOGENIC