

**Technical description**

Ball valves are designed and manufactured to ensure maximum durability and reliability. Valves meet requirements of API 6D and EN 12516-1.

**Application**

These ball valves serve as shut-off valve to provide complete closing or opening of the delivered medium flow. The ball valves enable the flow of delivered media in both direction. Valves are intended for water, weak acid, hydrocarbons, crude oil products, air, natural gas, coke-oven gas, blast-furnace gas, city gas, propane-butane and other media.

Basic standards for design

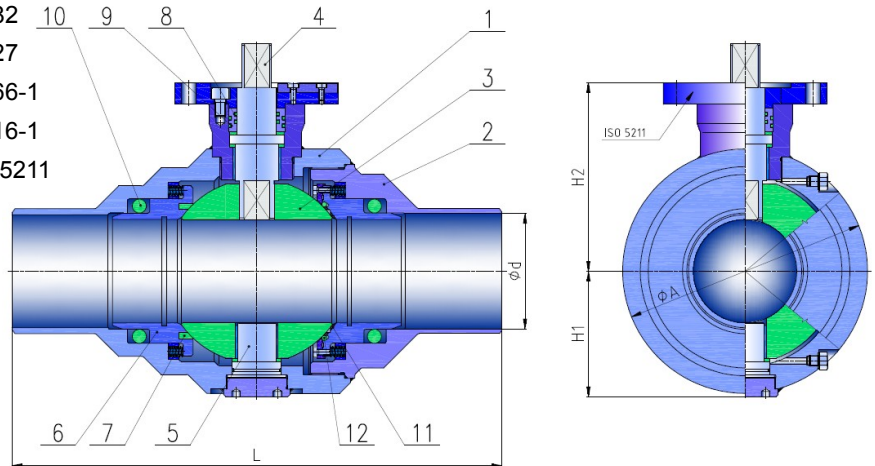
- Building length..... EN 12982
- Dimension of the welding-on ends. .... EN 12627
- Testing..... EN 12266-1
- Pressure-temperature dependence..... EN 12516-1
- Top flange dimension..... EN ISO 5211

Control method

By hand lever, gear box, electric actuator, electric actuator with gearbox, pneumatic actuator

Connecting into piping

Flanged, welding-on



**MATERIAL SPECIFICATION**

pos.	Designation	Material				
1	Body	A350 LF2	A105	1.4541	1.4401	1.4404
2	Bonnet	A350 LF2	A105	1.4541	1.4401	1.4404
3	Ball	X12Cr13 + Cr (ENP)	X12Cr13 + Cr (ENP)	1.4541 + Cr (ENP)	1.4401 + Cr (ENP)	1.4404 + Cr (ENP)
4	Upper Stem	X12Cr13	X12Cr13	1.4541	1.4401	1.4404
5	Bottom stem	X12Cr13	X12Cr13	1.4541	1.4401	1.4404
6	Seat	A350 LF2 + STL	A105 + STL	1.4541	1.4401	1.4404
7	Seat ring	PTFE				
8,	O-ring	NBR, HNBR, EPDM, Viton, PTFE				
9	O-ring	NBR, HNBR, EPDM, Viton, PTFE				
10	O-ring	NBR, HNBR, EPDM, Viton, PTFE				
11	Overlay	Ni, Stelit 6				
12	Seat ring	NBR, HNBR, EPDM, VITON, Graphite				

DN	PN 40						PN 63						PN 100					
	L	d	H1	H2	EN ISO 5211	weight (kg)	L	d	H1	H2	EN ISO 5211	weight (kg)	L	d	H1	H2	EN ISO 5211	weight (kg)
50	300	54,5	70	204	F07	21	300	52,3	69	138	F07	28	300	52,3	69	138	F07	28
65	360	70,3	100	305	F10	33	360	68,1	100	160	F10	41	360	66,1	100	160	F10 / F12	43
80	390	82,5	110	335	F12	54	390	79,9	107	181	F12	58	390	78,9	107	181	F12	64
100	450	107,1	116	423	F12	66	450	105,3	116	209	F12	72	450	103,1	116	209	F12 / F14	75
125	525	131,7	150	444	F14	98	525	127,8	150	229	F14	115	525	127,1	150	229	F14 / F16	117
150	600	159,3	180	526	F16	145	600	155,7	180	266	F16	170	600	152,3	180	266	F16 / F25	195
200	600	206,5	197	619	F25	210	600	204,9	197	312	F25	265	600	201,5	197	312	F25	295
250	730	258,8	250	855	F30	285	730	255,4	250	475	F30	380	730	253	250	475	F30	470
300	850	307,9	300	940	F30	445	850	301,9	300	510	F30	535	850	298,9	300	510	F30	650

**Basic standards for design**

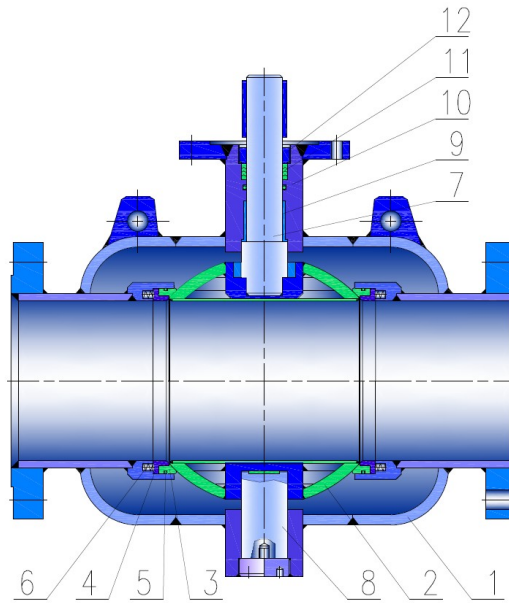
- Building length.....see the table
- Flange dimension.....EN 1092-1
- Dimension of the welding-on ends .....EN 12627
- Testing.....EN 12266-1
- Pressure-temperature dependence.....E 12516-1
- Top flange dimension.....EN ISO 5211

**Control method**

By hand lever, gearbox, electric actuator, electric actuator with gearbox, pneumatic actuator

**Connecting into piping**

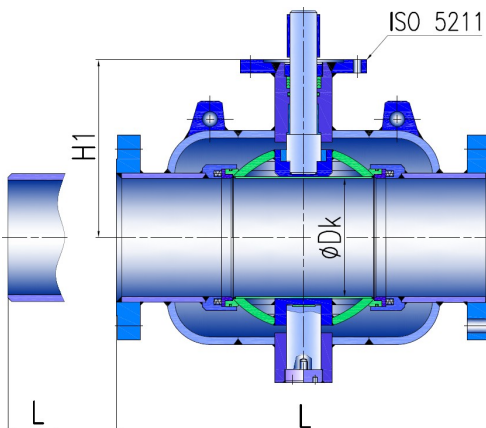
Flanged, welding-on ends



**Material execution**

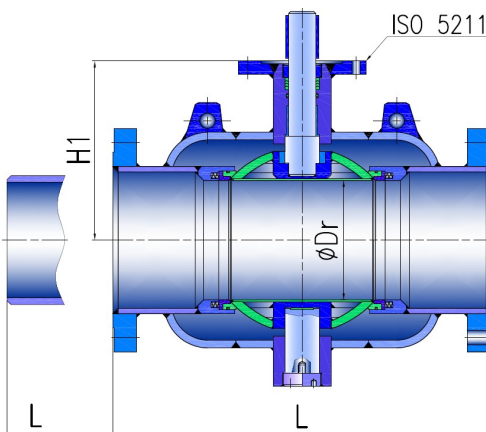
pos	Designation	Material
1	Body	P265 GH
2	Ball	1.4301
3	Seat	PTFE
4	Ring	P265 GH + ENP
5	O-ring	VITON
6	Spring	INCONEL X750
7	Upper Stem	1.4301
8	Bottom stem	1.4301
9	Bushing	PTFE
10	O-ring	VITON
11	Gland	PTFE
12	Nut	P265 GH

**Full flow execution**



DN	PN 16							PN 25						
	L	Dk	H1	EN ISO 5211	Kv m3/h	weight (kg)		L	Dk	H1	EN ISO 5211	Kv m3/h	weight (kg)	
						RF	BW						RF	BW
200	630	200	464	F16	8650	170	150	630	200	464	F16	8650	179	150
250	710	250	491	F16	14705	228	200	710	250	491	F16	14705	240	200
300	750	300	525	F25	20760	303	265	750	300	525	F25	20760	318	265
350	860	350	547	F25	24220	479	423	860	350	547	F25	24220	507	423
400	970	400	599	F25	31140	677	605	970	400	599	F25	31140	715	605
500	1150	500	646	F30	49305	1227	1099	1150	500	646	F30	49305	1267	1099
600	1380	600	725	F35	64875	2472	2280	1380	600	725	F35	64875	2535	2280
700	1525	700	795	F35	80445	3390	3160	1525	700	795	F35	80445	-	3160
800	1650	779	820	F40	95583	4426	4110	1650	779	820	F40	95583	-	4110
900	1750	876	902	F40	115045	6106	5666	1750	876	902	F40	115045	-	5666
1000	1850	976	963	F40	129750	7794	7260	1850	976	963	F40	129750	-	7260

**Reduced flow execution**



DN	PN 16							PN 25						
	L	Dr	H1	EN ISO 5211	Kv m3/h	weight (kg)		L	Dr	H1	EN ISO 5211	Kv m3/h	weight (kg)	
						RF	BW						RF	BW
250	630	200	464	F16	3028	98	70	630	200	464	F16	3028	110	70
300	710	250	491	F16	4723	184	146	710	250	491	F16	4723	199	146
350	750	300	525	F25	6834	258	202	750	300	525	F25	6834	286	202
400	860	350	547	F25	9256	362	290	860	350	547	F25	9256	400	290
450	970	400	599	F25	12110	467	375	970	400	599	F25	12110	504	375
500	970	400	599	F25	15570	648	520	970	400	599	F25	15570	688	520
600	1150	500	646	F30	19030	748	556	1150	500	646	F30	19030	811	556
700	1380	600	725	F35	27248	1271	1041	1380	600	725	F35	27248	-	1041
800	1525	700	795	F35	37195	2736	2420	1525	700	795	F35	37195	-	2420
900	1650	779	820	F40	48440	3750	3310	1650	779	820	F40	48440	-	3310
1000	1750	876	902	F40	61415	4844	4310	1750	876	902	F40	61415	-	4310
1200	1850	976	963	F40	74390	-	4560	1850	976	963	F40	74390	-	4560

**Type designation**

**K89 XYZ RST - M PN / A**

**K89** – Valve type – Trunnion Ball Valve

**X** – Body design

- 2...2 - Piece construction
- 3...3 - Piece construction

**Y** – Seat execution

- 1...PTFE
- 2...PTFE + secondary sealing by paste
- 3...PTFE + Fire safe
- 4...PTFE + Fire safe + secondary sealing by paste
- 5...Metal + O - ring
- 6...Metal + O - ring + secondary sealing by paste
- 7...Metal + O - ring + Fire safe
- 8... Metal + O - ring + Fire safe + secondary sealing by paste
- 9... Metal to metal

**Z** – Control stem sealing method

- 1...Dynamic, Static - 2 x O - ring
- 2... Dynamic - 2xO-ring, Static-2xO-ring + Graphite
- 3...Fire safe: Dynamic - 2 x O - ring + Graphite packing,  
Static - O - ring + Graphite
- 4...V-shaped PTFE O-rings
- 5...Graphite packing

**R** – Flow through the valve

- 1...Straight, full flow
- 2...Straight, reduced flow

**S** – Connection into piping

- 1...Flanged
- 2...Welding-on ends
- 3...Combined

**T** – Control method

- 1...By hand lever
- 2...Hand wheel with gearbox
- 3...Electric actuator
- 4...Electric actuator with gearbox
- 5...Pneumatic actuator
- 9...Without control - bare shaft

**M** – Body material

- 0...Stainless steel
- 2...Alloy steel
- 4...Carbon steel

**A** – Special execution

- DPE**...Seats with double piston effect „Double Piston Effect”
- As**...Antistatic design
- Lt**...Low temperature design

