

**DIN Ball valve with full Bore,
2-piece body construction**

flanged

**PN 10-100
DN 15-300**

Applications

- General industry, power stations, chemical industry, oil and petrochemical industry as well as associated branches of industry
- Paper industry, food industry, pharmaceutical industry

Operating data

- Temperature range, depending on the operating pressure and the seat material, -10 °C to +250 °C
- Permissible operating pressure: see table page 2

Design

- Two-pieces body; full bore;
- Length:
 - PN 16-40:
Short body : according to EN 558-1 series 27 (DIN 18)
Long body : according to EN 558-1 series 1 (DIN F1)
 - PN 63-100:
according to EN 558-2 series 5
- Design according to DIN 3840
- Design details after DIN 3357
- Flanges according to DIN 2501 form C
- Test according to BS 6755 P.1A, DIN 3230 P.3
- Fire tested according to BS 6755 P.2
- The valves meet the safety requirements of the Pressure Equipment Directive 97/23/EC (PED) appendix I for fluids of the group 1 and 2.
- Vacuum service up to 0,00013 mbar.

Standard variants

- Fire safe version
- Seat in:
 - PTFE + Glass Fibre
 - PTFE + Graphite
 - PTFE + Stainless Steel powder
 - PEEK
 - UHMWPE
- Seal O'ring in EPDM, Nitrile, FEP
- Oval handle (up to DN 50), T handle
- Locking device
- Gas service, tested for a minimum pressure of 0,3 bar
- ATEX version in accordance with 94/9/EC directive

Remarks

- Seat selection 8226.21
- Operating instructions 8226.81

On all enquiries/orders please specify

- | | |
|-------------------------|---------------------------|
| 1 Type | 6 Medium |
| 2 PN | 7 Operating temperature |
| 3 DN | 8 Pipe connection |
| 4 Working pressure | 9 Standard variants |
| 5 Differential pressure | 10 Type series booklet n° |



Working pressures

PN	Material	Working pressure in bar for temperature °C							
		-10 °C	50 °C	100 °C	135 °C	150 °C	180 °C	200 °C	250 °C
10	1.0619	10,00	10,00	9,30	9,00	8,70	8,25	7,80	7,10
	1.4408	9,00	8,70	7,80	7,40	7,00	6,70	6,40	6,00
16	1.0619	16,00	16,00	15,00	14,45	14,00	13,20	12,40	11,40
	1.4408	14,60	14,00	12,40	11,80	11,20	10,75	10,30	9,60
25	1.0619	25,00	25,00	23,30	22,50	21,70	20,50	19,40	17,80
	1.4408	22,80	22,80	21,00	20,40	19,60	19,00	18,30	17,20
40	1.0619	40,00	40,00	37,30	36,00	34,70	32,50	30,20	28,40
	1.4408	36,40	34,70	31,00	29,60	28,00	27,00	25,80	24,00
63	1.0619	63,00	63,00	58,80	55,40	54,00	52,00	49,00	44,80
	1.4408	57,40	54,60	49,00	45,60	44,20	42,80	40,60	37,80
100	1.0619	100,00	100,00	93,30	90,00	86,70	81,00	75,60	71,10
	1.4408	91,00	86,70	77,80	74,00	70,20	67,30	64,40	60,00

Temperature limits of seats

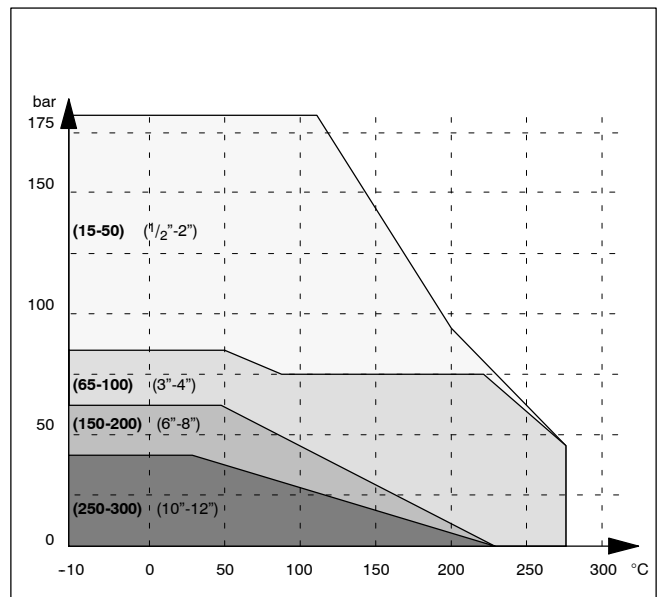
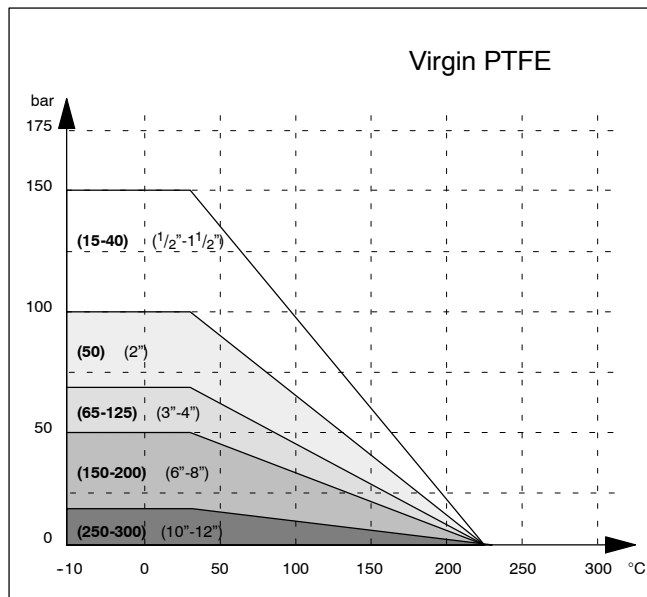
The values that are shown are an approximation to reality based on our own past experience.

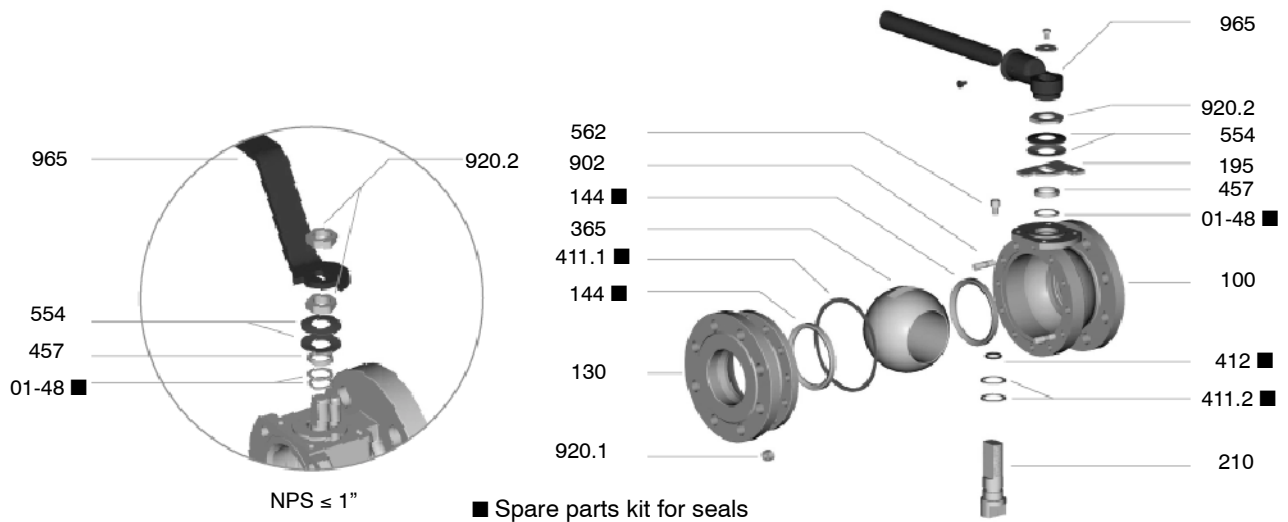
Virgin PTFE:

Inert to most media, low friction coefficient, limited temperature resistance. Good performance in gas applications.

Other Seats:

For precise determination and choice of seat see seat selection 8226.21




Materials

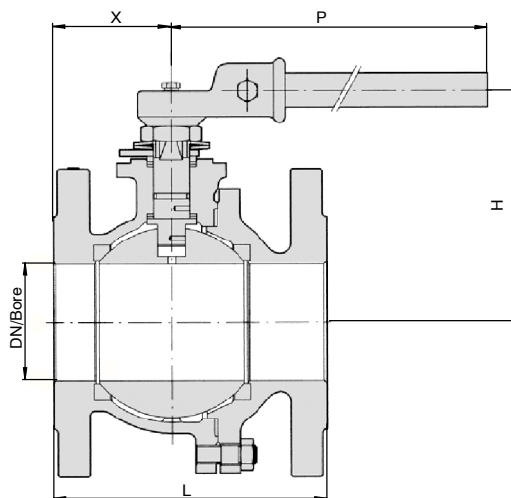
Part no.	Name of parts	Stainless Steel Version	Cast Steel Version
01-48	Gland Packing	DN ≤ 25: PTFE+C+Graphite DN > 25: PTFE	DN ≤ 25: PTFE+C+Graphite DN > 25: PTFE
100	Body	1.4408	1.0619
130	Body Connector	1.4408	1.0619
144	Seat	PTFE	PTFE
195	Stop Plate	Steel nickel plated	Steel zinc plated
210	Stem	ASTM A479 316 (1.4401)	DN ≤ 50: ASTM A479 316 (1.4401) 50 < DN < 250: ASTM A479 410 (1.4021) DN ≥ 250: ASTM A479 316 (1.4401)
365	Ball	DN ≤ 32: ASTM A479 316 (1.4401) DN > 32: 1.4408	DN ≤ 32 : ASTM A479 316 (1.4401) DN 40 & DN 50 : 1.4408 50 < DN < 250: DIN 1.4027 DN ≥ 250: 1.4408
411.1	Body Seal	DN ≤ 25: PTFE DN > 25: 316L+Flexite®	DN ≤ 25: PTFE DN > 25: 316L+Flexite®
411.2	Stem Seal	DN ≤ 25: PTFE+C+Graphite DN > 25: PTFE	DN ≤ 25: PTFE+C+Graphite DN > 25: PTFE
412	Stem O'ring	FPM (Viton®)	FPM (Viton®)
457	Gland Ring	ASTM A479 316 (1.4401)	ASTM A479 316 (1.4401)
554	Washer	1.4122 (SS)	Steel zinc plated
562	Stop Pin	DIN 267/11 A2-70	Steel
902 920.1	Stud Bolt-Bolt Nut	PN 10-16 DN ≤ 250: DIN 267/11 A2-70 DN > 250: DIN 267/3 C 8.8 zinc plated	DIN 267/3/4 C 8.8 zinc plated
		PN 25-40 DN ≤ 150: DIN 267/11 A2-70 DN > 150: DIN 267/3 C 8.8 zinc plated	
		PN 63-100 DN ≤ 50: DIN 267/11 A2-70 DN > 50: ASTM A193/A194 B7M/2HM deltatone coated	ASTM A193/A194 B7M/2HM blued
920.2	Nut	DIN 267/11 A2-70	DIN 267/3 C 8.8 blued
965	Hand Lever	DN ≤ 25: SS+Plastic DN > 25: GGG 40	DN ≤ 25: Steel coated DN > 25: GGG 40

Standard variants
Fire Safe Version:

Part no.	Name of parts	Material
01-48	Gland Packing	Graphite
411.1	Body Seal	316L+Graphite

Ball 316 for Cast Steel Version (DN 65 to DN 200 incl.):

Part no.	Name of parts	Material
210	Control Shaft	ASTM A479 316 (1.4401)
365	Ball	1.4408

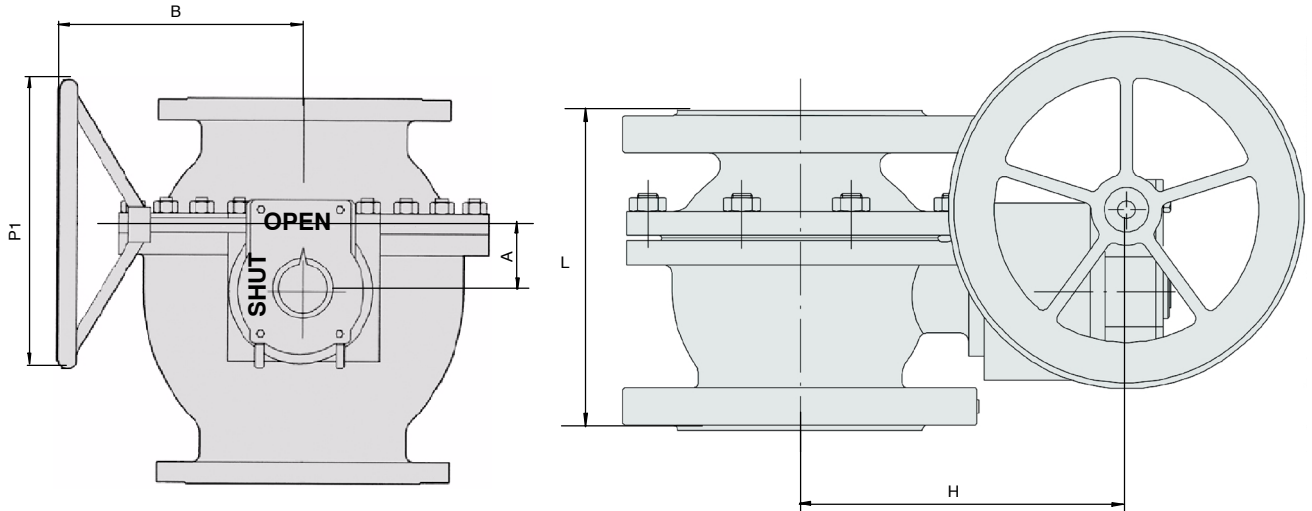
Dimensions
Valves with handles


PN 10 - 16									
DN	Bore	L		Mounting plate ISO 5211	X	P	H	Weight (kg)	
		Short	Long					Short	Long
Values for DN 15 - 50 see PN 25 - 40									
65	65	170	290	F07	75	250	138	15,0	16,1
80	76	180	310		78	250	148	20,0	22,3
100	102	190	350	F10	95	500	196	32,0	36,5
125	111	325	400		162	500	199	44,0	50,5
150	144	350	480		175	750	223	70,0	80,0

PN 25 - 40									
DN	Bore	L		Mounting plate ISO 5211	X	P	H	Weight (kg)	
		Short	Long					Short	Long
15	14	115	130	F03	50	150	85	2,6	2,8
20	19	120	150		52	150	90	3,2	3,6
25	25	125	160		55	150	104	4,3	4,5
32	32	130	180	F05	58	200	116	6,2	7,8
40	38	140	200		60	200	118	7,6	8,5
50	51	150	230	F07	60	250	128	11,4	12,0
65	65	170	290		75	250	138	15,5	16,3
80	76	180	310		78	250	148	21,0	23,0
100	95	190	350	F10	85	500	190	34,0	40,5
125	111	325	400		162	750	199	46,0	53,0
150	144	350	480		175	750	223	74,5	85,0

PN 63 - 100							
DN	Bore	L 1)	Mounting plate ISO 5211	X	P	H	Weight (kg)
15	14	165	F03	82	150	85	3,5
20	19	190		95	150	90	4,5
25	25	216	F05	108	150	99	6,5
40	38	241		102	200	118	13,0
50	51	292	F07	117	350	128	21,3
80	76	356		136	350	148	32,3
100	102	432		F10	216	750	196

1) Length according to ANSI 600

Valves with gear operators


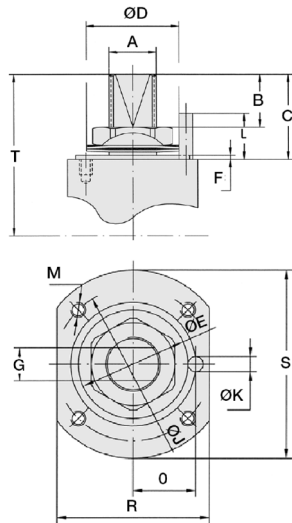
PN 10 - 16											
DN	Bore	L		Mounting plate ISO 5211	Gear operator	H	A	B	P1	Weight (kg)	
		Short	Long							Short	Long
100	102	190	350	F10	RM. 551	196	71	282	300	40,0	44,5
125	111	325	400			199	71	282	300	52,0	58,5
150	144	350	480			223	71	282	300	78,0	88,0
200	190	400	600	F14	RM. 882	342	86	340	400	175,0	190,0
250	241	450	-			378	86	340	400	230,0	-
300	295	500	-			440	130	365	500	305,0	-

PN 25 - 40											
DN	Bore	L		Mounting plate ISO 5211	Gear operator	H	A	B	P1	Weight (kg)	
		Short	Long							Short	Long
100	95	190	350	F10	RM. 551	196	71	282	300	42,0	48,5
125	111	325	400			199	71	282	300	54,0	61,0
150	144	350	480			223	71	282	300	83,0	93,5
200	190	400	600	F14	RM. 882	342	86	340	400	185,0	-
250	241	450	-			396	86	340	400	250,0	-
300	285	500	-			440	130	365	500	370,0	-

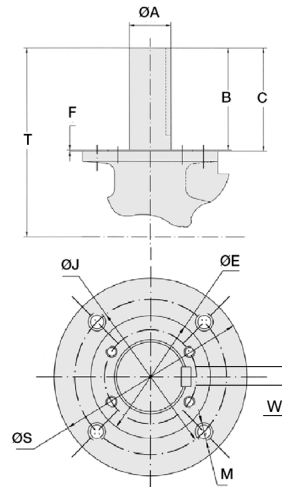
PN 63 - 100											
DN	Bore	L		Mounting plate ISO 5211	Gear operator	H	A	B	P1	Weight (kg)	
		Short	Long							Short	Long
100	102	190	350	F10	RM. 551	196	71	282	300	82,0	-

Coupling flange dimensions

ISO F14D DN 15 - 150



ISO F14D DN 200 - 300


Valves with handle or bare shaft
PN10 - 16 - 25 - 40

DN	ISO 5211 DIN 3337	T	A	B min.	C	D	E	F	G	W	J	K	L	O	M	R	S
15	F03	41,5	M10x1,5	9,5	18,0	20	25	1,5	6		36	7	13,5	14,0	M5	48	-
20		45,5		8,0	16,5								14,0	16,5			
25	F05	53,0	M12x1,5	10,0	20,5	25	35	2,0	8		50				M6	65	
32		84,0		14,5	29,0			28	2,0								
40	F07	90,0	M14x1,5	25,5	46,0	50	55	3,0	19	-	70				M8	72	90
50		130,0															
65	F10	140,0	M24x2	40,5	66,0	71	70	3,0	22		102				M10	100	125
80		150,0															
100	F14	196,0	M36x2	42,0	64,5	-	100	3,0	30		140				M16	175	
125		284,0															
150	F16	223,0	ø 50	171,5	174,5	-	130	3,0	18	165					M20	210	
200		321,0															
250	F16	474,5	ø 65	171,5	174,5	-	130	3,0	18	165					M20	210	
300		474,5															

PN63 - 100

DN	ISO 5211 DIN 3337	T	A	B min.	C	D	E	F	G	W	J	K	L	O	M	R	S
15	F03	41,5	M10x1,5	8,0	16,5	20	25	1,5	6		36	7	14	14	M5	40	-
20		45,5															
25	F05	68,0	M14x1,5	14,0	30,0	26	35	3,0	9	-	50				M6	52	65
40		90,0		14,5	29,0	28	35	2,0								48	
50	F07	130,0	M24x2	25,5	46,0	50	55	3,0	19		70				M8	72	90
80		150,0															
100	F10	196,0	M36x2	40,5	66,0	71	70	3,0	22		102				M10	100	125

Special execution: Valves with gear boxes

DN	ISO 5211 DIN 3337	T	A	B min.	C	D	E	F	G	W	J	K	L	O	M	R	S
200	F14	308,0	ø 50	145,5	148,5	-	100	3	-	14	140	-	-	-	M16	-	175
250	F14	405,5	ø 50	145,5	148,5	-	100	3	-	14	140	-	-	-	M16	-	175
300	F16	475,5	ø 65	171,5	174,5	-	130	3	-	18	165	-	-	-	M20	-	210

Hydraulic characteristics

DN	Bore	Flow coefficient			
		PN 10 - 16 - 25 - 40		PN 63 - 100	
		Kvo	Cvo	Kvo	Cvo
15	14	15	18	15	18
20	19	34	40	34	40
25	25	55	64	55	64
32	32	90	105	-	-
40	38	130	152	130	152
50	51	220	257	220	257
65	65	330	386	-	-
80	76	840	983	330	386
100	102 (95*)	1350	1580	840	983
125	111	1880	2200	-	-
150	144	3500	4095	-	-
200	190	7600	8892	-	-
250	241	12500	14625	-	-
300	285	19800	23166	-	-

*) PN 25-40

Operating torques

DN	Operating torque ²⁾ in Nm		
	PN 16	PN 40	PN 100
15	5	8	10
20	6	8	10
25	8	10	15
32	15	20	-
40	20	25	30
50	25	35	40
65	40	50	-
80	60	90	120 ¹⁾
100	120	175	250 ¹⁾
125	150	220	-
150	250	350	-
200	500	750	-
250	1000	1400 ¹⁾	-
300	1500	2000 ¹⁾	-

¹⁾ Values according to the pressure limitations of seats. See seats.

²⁾ The safety coefficient to define the adapted actuator is not included in the torque value.

The values shown in this table are an average of the real values. These values have been taken under ideal conditions of clean water, room temperature, virgin PTFE, daily handling and without safety rate. For different types of services and conditions, we suggest that the following corrective factors are used.

Corrective factors	
Filled PTFE seats	1,2-1,4
Low temperature (-50 °C)	1,5
Low temperature (-100 °C)	2
Long inactivity	2 (min.)
Humid gases	1,5
Dry gases (natural gases)	1,7
Powder	1,3
Degreasing fluid	1,2

Product Features - to our Customers' Benefit

Double D stem end always showing flow direction.

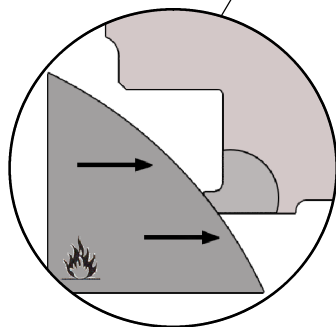
Top flange according to ISO 5211 to allow for easy assembly of all actuator types

O'Ring: anti-leak element for excellent tightness toward outside and improved performances in vacuum or low pressure gas service. (TA-Luft Conformity Certificate issued by TÜV Rheinland in 98)

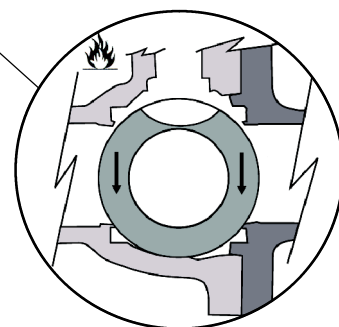
Spring effect of spiral wounded body seal ensuring excellent response vis à vis thermal cycles.

Anti-static stem as per BS 5351, max electrical strength of 10 Ω

The superior quality of the ball surface results in lower operating torques and longer service life thus reducing actuation and maintenance costs.



Second metal lips enables metal to metal contact between ball and seat.



Support around the ball. It prevents the ball from falling down when the seats are destroyed by fire

Fire Safe Design

This leaflet is not contractual and may be amended without notice

09.02.04

8226.1/2-10

