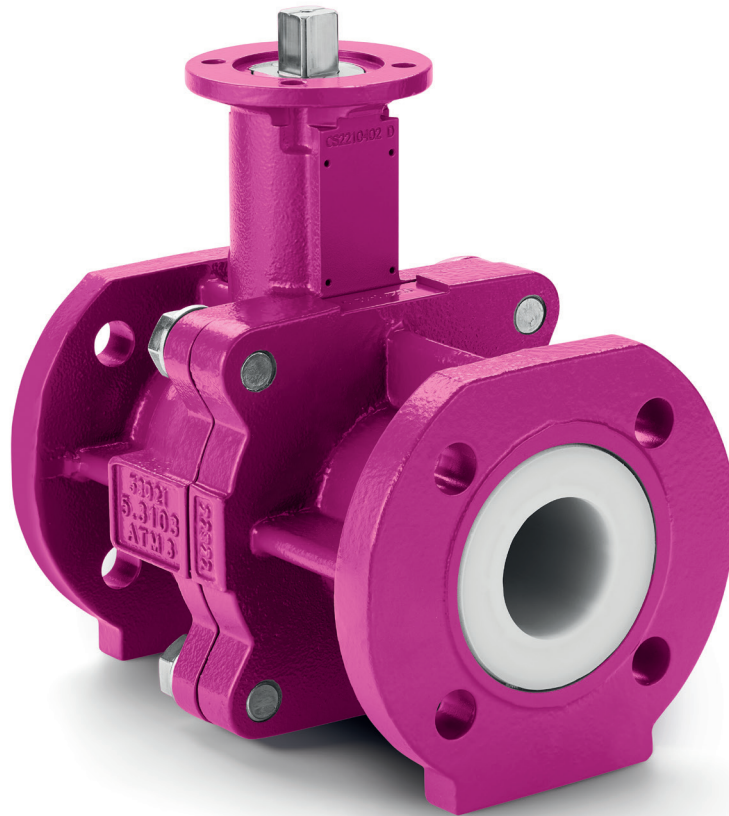


chemvalve-schmid.com



# ChemBall | CSB

PFA Lined Ball Valve



Product Brochure

## Company Overview

ChemValve-Schmid AG develops and manufactures high quality valves which are sold and distributed through a carefully developed network of long-standing partners in more than 50 countries all over the world.

We have been developing Check Valves and PTFE Lined Butterfly Valves in close cooperation with the most important European PTFE manufacturers since the 1980s. As a result, we have over 30 years of expertise in valve production. Our private and therefore independent company has shown consistent and healthy growth since then.

„Innovative – proficient – reliable“, that’s our motto. Thanks to years of investment in state-of-the-art production technologies and highly qualified employees, we offer unprecedented product and service quality in this sector. We creatively develop on-time solutions that are focused on our customers’ needs. Thanks to our process reliability, which covers the entire value chain through to warehousing and has evolved over many years, standard products are delivered within only a few days in line with customer-controlled assembly requirements. Existing products are continuously improved and new products are developed based on customer requirements.

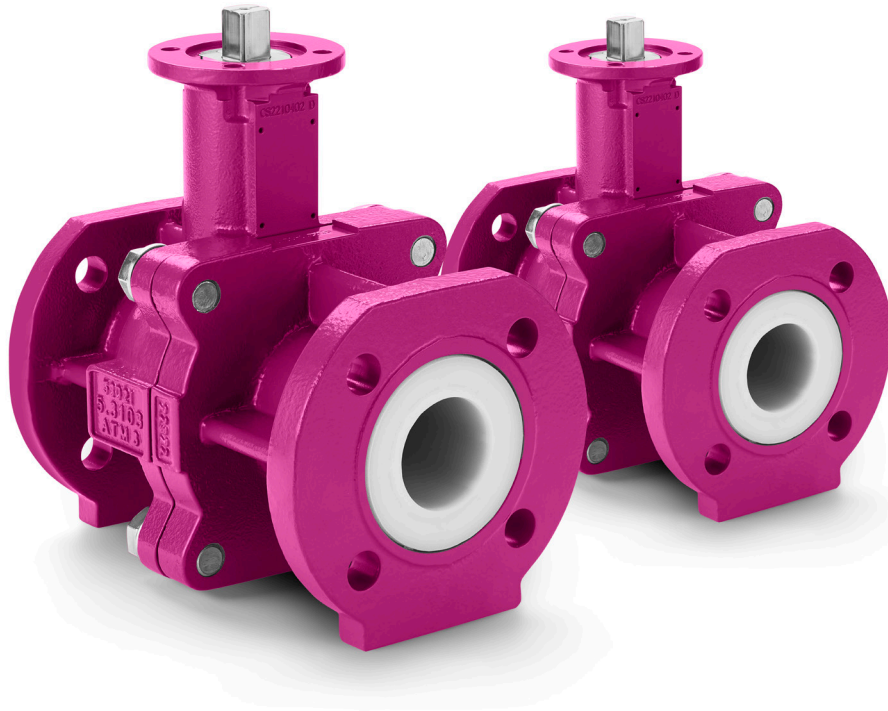
We deliver what we promise. And we naturally assume full responsibility for our orders and obligations.

Give us a try!





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Our patented TrueFloat® technology makes the **ChemBall | CSB** the most innovative PFA lined ball valve available on the valve market today, offering long service life while securely handling aggressive media



### Patented TrueFloat® Technology

- Worldwide patented design combines the advantages of both floating and trunnion ball valves
- A single-piece PFA coating encloses the dynamic, metallic connection between ball and stem
- Reduced abrasion prevents age-related wear and tear



### Security<sup>2</sup>

- For safety-critical applications, an optional, second chevron seal ensures increased security requirements are met
- An further optional leak detection port between the chevron seals offers integration with plant monitoring systems
- The sophisticated labyrinth seal tightly and reliably seals the two body halves for maximum security



### Multicultural & flexible!

- Flange & face-to-face dimensions available in EN, ASME & JIS
- Three stem designs available for maximum actuator compatibility
- Head flange according to ISO 5211



### Clever & Maintenance-friendly

- The bayonet mount makes replacing chevron seals effortless
- The integrated stand makes maintenance easier
- Maintenance-free bearings for uninterrupted operation



### FFF — Form Follows Function

- Full bore design for maximum flow rate
- Axial grooves improve flow behaviour
- Capable of sustained operation in vacuum applications





**Multiculti & flexible!**  
Standardised connections and F2F lengths



**Clever & Maintenance-friendly**

User-friendly design, including maintenance-free shaft bearing and integrated stand



**Security<sup>2</sup>**  
Labyrinth seal and double chevron seals guarantee excellent operational security

**Adaptive Sealing System**

Belleville springs ensure constant sealing performance

**Durable Seals**

Large ball seals guarantee leak-free operation



**Patented TrueFloat® Technology**

Flexible, metallic stem and ball connection with single-piece PFA lining



**Form Follows Function!**

Unique axial grooves improve flow behaviour

**Minimal Dead Space**

No deposits or residues from medium

**High Quality PFA Lining**

PFA lining applied in-house to the highest quality standards and a minimum of 3mm thick

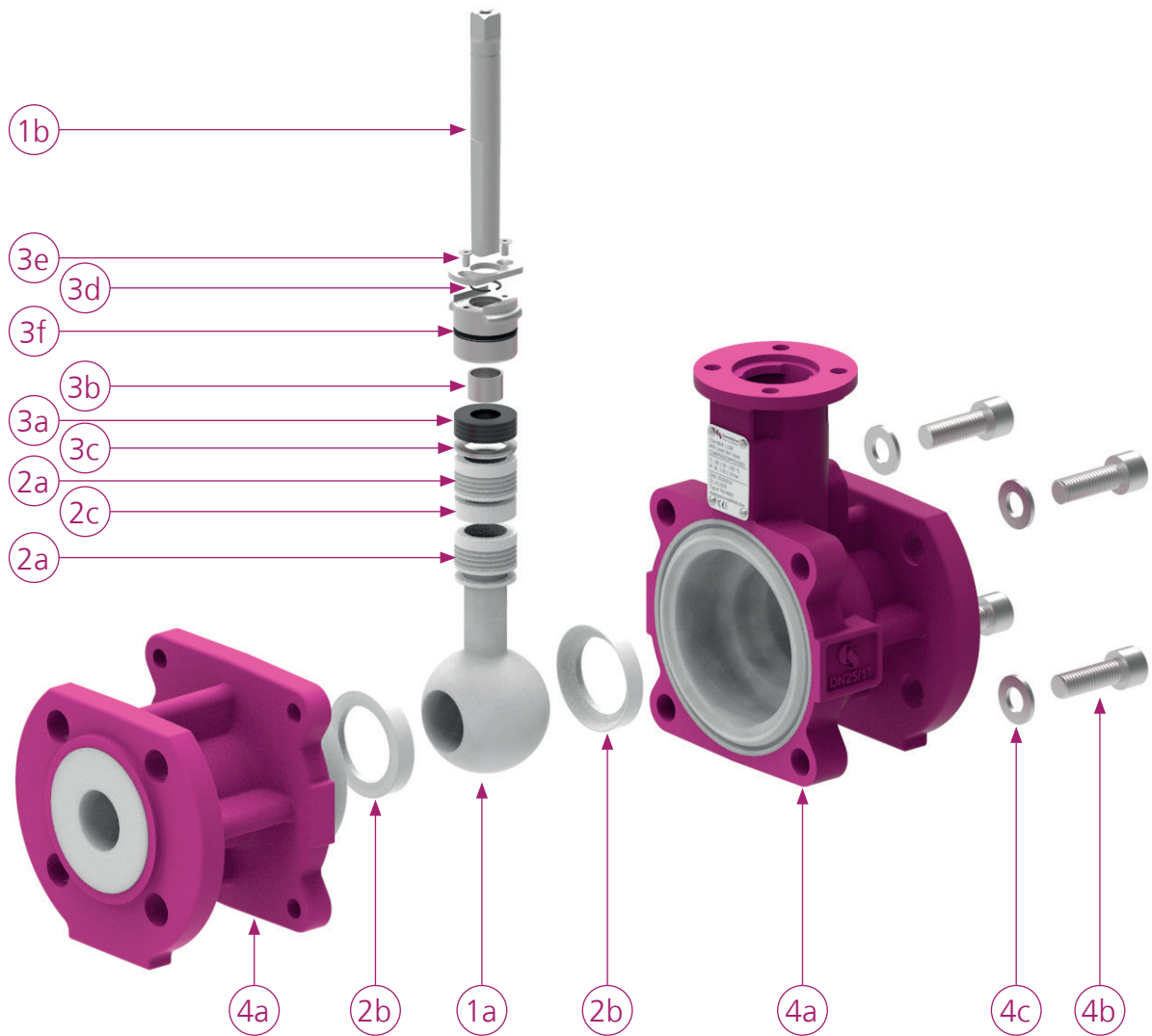
**External Corrosion Protection**

120µm epoxy coating according to ISO 12944-5 C2M



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## Components



Item #	Description	Materials
1a	Ball	PFA/1.4404
1b	Stem	1.4404
2a	Chevron Seals	PTFE
2b	Ball Seals	PTFE
2c	Spacer	PTFE
3a	Belleville Springs	Carbon Steel
3b	Shaft Bushing	PTFE/Steel

Item #	Description	Materials
3c	Pusher	1.4301
3d	Spring-lock Washer	1.4301
3e	Locking Plate & Screws	1.4404
3f	Bayonet Coupling	1.4404
4a	Valve Body	PFA/5.3103
4b	Body Bolts	Stainless Steel
4c	Washers	Stainless Steel



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## Specifications & Industry Standards

Nominal Diameter • DN 15–200 | 1/2"–8"



Flange Connection • EN 1092-1, PN 10–16  
• ASME B16.5, Class 150  
• JIS 10K



Top Flange • ISO 5211



Max Working Pressure • 16 bar



Operating Temperature • -20° C to 200° C



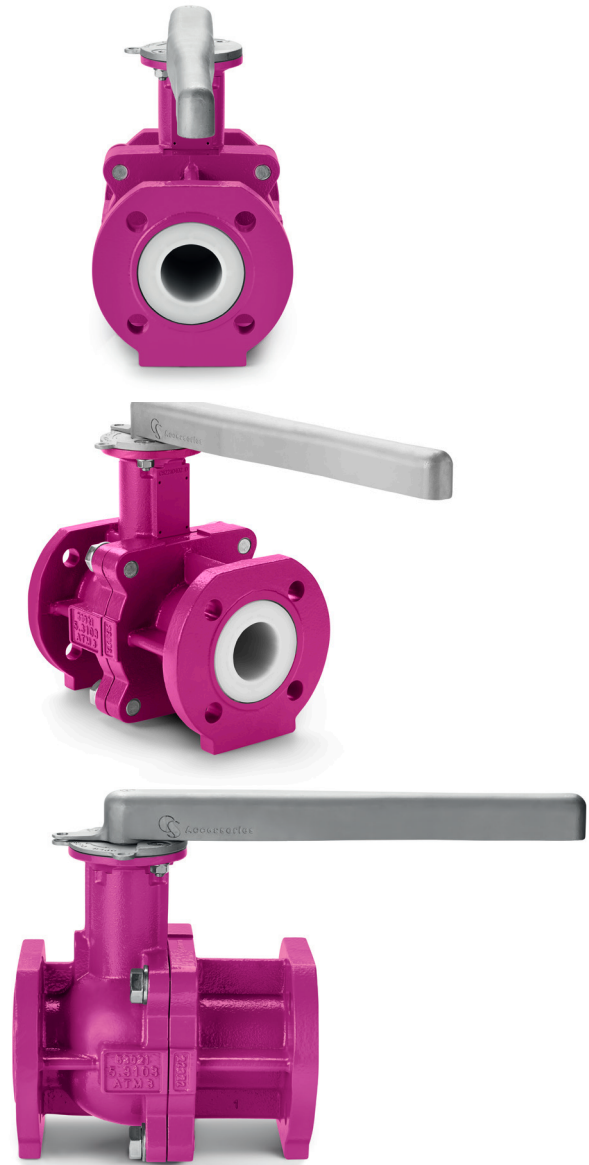
Face-to-Face Length • EN 558, Row 1  
• ASME B16.10, Class 150, Row 19



Conformity • PED 2014/68/EU  
• ATEX 2014/34/EU  
• Food (EC) Nr. 1935/2004 | FDA  
• TA-Luft | ISO 15848-1

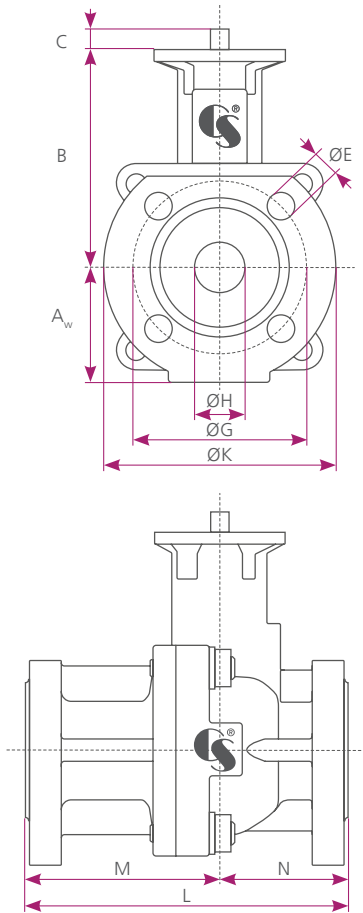


Pressure Test • EN 12266-1



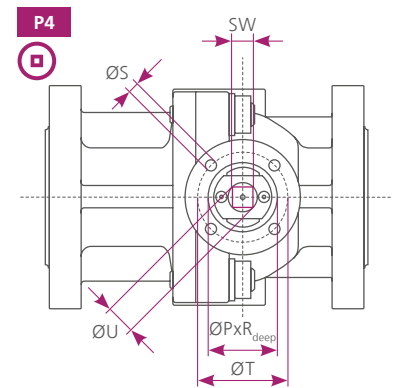
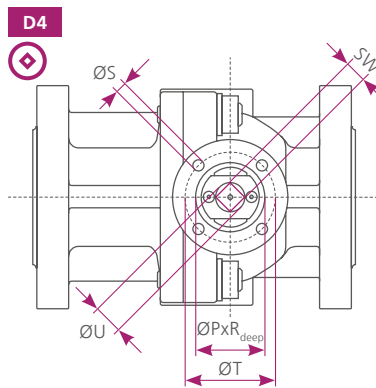
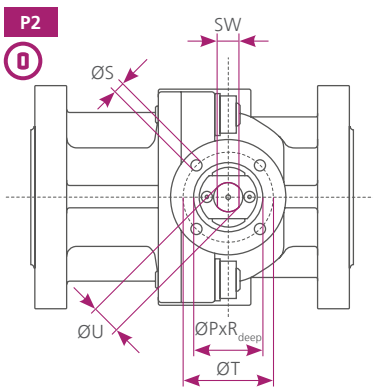
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## Dimensions | EN



DN [mm]	15	20	25	32	40	50	65	80	100	125	150	200
ØH [mm]	15	20	25	32	40	50	65	80	100	125	150	200
L [mm] <sup>1)</sup>	130	150	160	180	200	230	290	310	350	400	480	600
ØG	65	75	85	100	110	125	145	160	180	210	240	295
ØE	4x 14	4x 14	4x 18	4x 18	4x 18	4x 18	4x 18 8x 18	8x 18	8x 18	8x 18	8x 22	8x22 (PN10) 12x22 (PN16)
ØK	95	105	115	140	150	165	185	200	220	250	285	340
M	76	91	98.5	110	121	144	175	185	205	230	270	350
N	54	59	61.5	70	79	86	115	125	145	170	210	250
A	50	52.5	57.5	70	75	82.5	95	105	121	135	157	222
B	103	105.5	108	111.5	151.5	156.5	189.5	197	214	230.5	281.5	324
C <sub>P2</sub>	16	16	16	16	30	30	39	39	39	39	48	48
C <sub>D4/P4</sub>	10	10	10	10	19	19	24	24	24	24	29	29
MOT [Nm] <sup>2)</sup>	18	18	18	18	78	78	120	120	168	204	240	360
MAST <sub>P2</sub> [Nm] <sup>3)</sup>	40	40	40	40	208	208	447	447	447	447	878	878
MAST <sub>D4/P4</sub> [Nm] <sup>3)</sup>	50	50	50	50	166	166	359	359	359	359	665	665
kg	3.9	4.8	5.4	-	11.8	15.2	-	28	39.7	-	76.7	-

- 1) Acc. to EN 558, Row 1
- 2) Maximum Occuring Torque
- 3) Maxium Allowable Stem Torque: 1.4404, inc. 1.2 Safety Factor



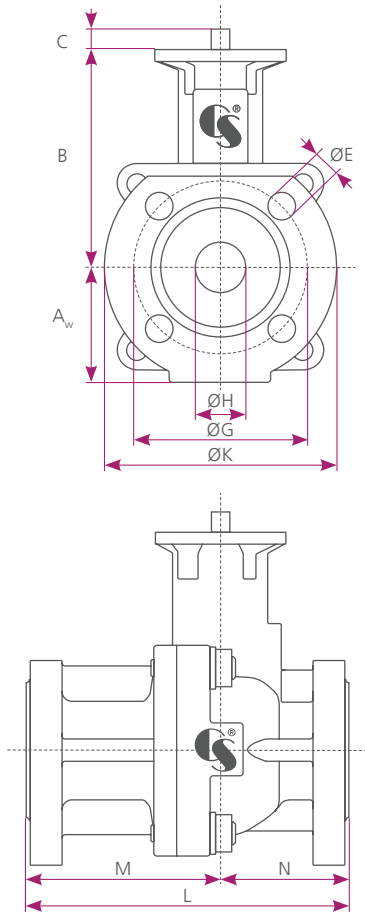
DN [mm]	15	20	25	32	40	50	65	80	100	150	200
SW	9	9	9	9	17	17	22	22	22	27	27
ØU	12	12	12	12	22	22	28	28	28	36	36
ISO <sub>5211</sub>	F05	F05	F05	F05	F07	F07	F10	F10	F10	F12	F12
ØT	50	50	50	50	70	70	102	102	102	125	125
ØS	4x7	4x7	4x7	4x7	4x9	4x9	4x11	4x11	4x11	4x13	4x13
ØP x R <sub>DEEP</sub>	36x3.5	36x3.5	36x3.5	36x3.5	56x3.5	56x3.5	71x3.5	71x3.5	71x3.5	86x3.5	86x3.5





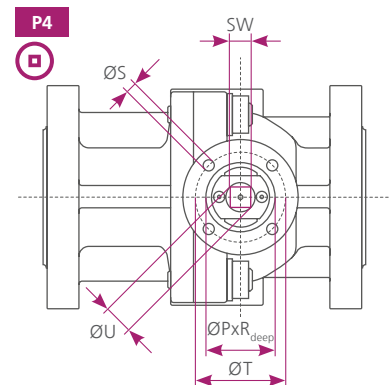
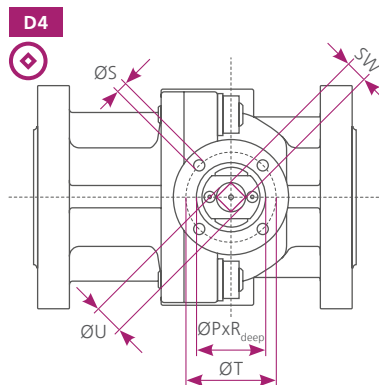
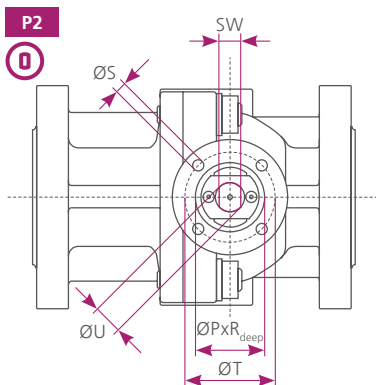
# ChemBall | CSB

## Dimensions | ANSI



DN [Inch]	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"
ØH [mm]	15	20	25	32	40	50	65	80	100	125	150	200
L [mm] <sup>1</sup>	108	117	127	140	165	178	190	203	229	356	267	457
ØG	60.3	69.9	79.4	88.9	98.4	120.7	139.7	152.4	190.5	215.9	241.3	298.5
ØE	4x 13	4x 15.9	4x 15.9	4x 15.9	4x 15.9	4x 19	4x 19	4x 19	8x 19	8x 22.2	8x 22.2	8x 22.2
ØK	90	100	110	115	125	150	180	190	230	255	280	345
M	58.5	63	66.5	72	86	93	100	104.5	117.5	196	129.5	152
N	49.5	54	60.5	68	79	85	90	98.5	111.5	160	137.5	140
A	50	52.5	57.5	61	75	82.5	95	105	121	135	157	222
B	103	105.5	108	111.5	151.5	156.5	182	197	214	230.5	281.5	324
C <sub>P2</sub>	16	16	16	16	30	30	39	39	39	39	48	48
C <sub>D4/P4</sub>	10	10	10	10	19	19	24	24	24	24	29	29
MOT [Nm] <sup>3</sup>	18	18	18	22	78	78	80	120	168	170	240	360
MAST <sub>P2</sub> [Nm] <sup>4</sup>	40	40	40	32.5	208	208	447	447	447	447	878	878
MAST <sub>D4/P4</sub> [Nm] <sup>4</sup>	50	50	50	24.6	166	166	359	359	359	359	665	665
kg	3.5	4.1	4.8	-	9.9	13.5	-	25.1	35.9	-	59.9	-

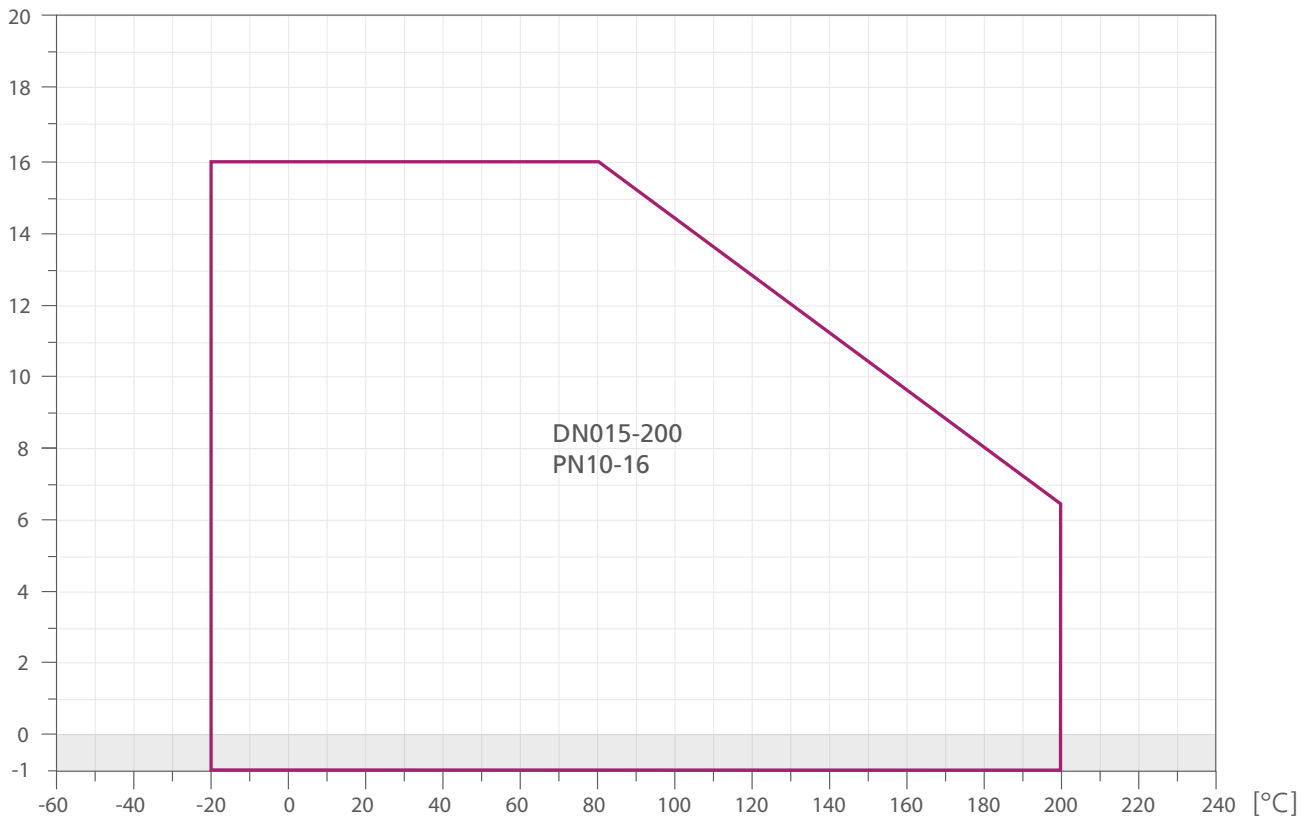
- 1) Acc. to ASME B16.10 Class 150 Row 19 "Short Pattern"
- 2) Acc. to ASME B16.10 Class 150 Row 18 "Long Pattern"
- 3) Maximum Occuring Torque
- 4) Maxium Allowable Stem Torque: 1.4404, inc. 1.2 Safety Factor



DN [inch]	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
SW	9	9	9	9	17	17	22	22	22	27	27
ØU	12	12	12	12	22	22	28	28	28	36	36
ISO <sub>5211</sub>	F05	F05	F05	F05	F07	F07	F10	F10	F10	F12	F12
ØT	50	50	50	50	70	70	102	102	102	125	125
ØS	4x7	4x7	4x7	4x7	4x9	4x9	4x11	4x11	4x11	4x13	4x13
ØP x R <sub>DEEP</sub>	36x3.5	36x3.5	36x3.5	36x3.5	56x3.5	56x3.5	71x3.5	71x3.5	71x3.5	86x3.5	86x3.5



[barg]



Flow Rate/Kv Values [m<sup>3</sup>/h]

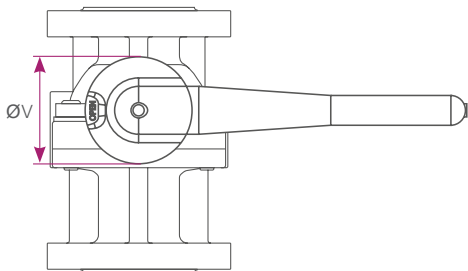
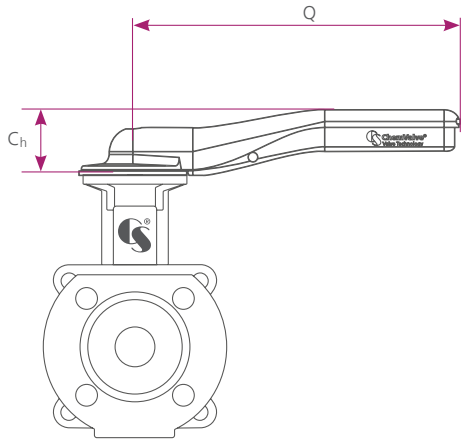
Opening Angle	DN [mm]											
	15	20	25	32*	40	50	65*	80	100	125*	150	200*
0°	0	0	0	-	0	0	-	0	0	-	0	-
10°	0	0	0	-	0	0	-	0.7	0.8	-	8.2	-
20°	0	0	0	-	0	1.3	-	5.4	11.8	-	38.7	-
30°	0	0	0.5	-	1.5	5.4	-	18.3	30.3	-	87.8	-
40°	0.05	0.2	1.6	-	5.2	12.2	-	37	61.3	-	158.6	-
50°	0.2	0.8	3.9	-	11.4	23.3	-	66.7	107.2	-	267.6	-
60°	0.7	2	7.9	-	22.2	40.8	-	112	182.7	-	429.6	-
70°	1.8	4	13.9	-	38	65	-	170.8	284.4	-	651.2	-
80°	3.4	6.1	19.2	-	51.6	85.8	-	218.4	386	-	782.6	-
90°	3.8	7	20.8	-	57.3	93	-	237.3	392	-	847.2	-

\*Calculations for these flow rates are pending



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## Actuation | Handlever



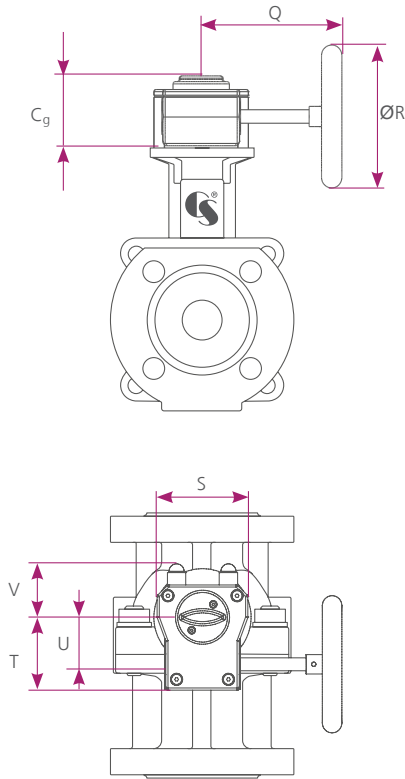
Material	
Grip	Stainless Steel
Ratchet Disc	Stainless Steel

DN [mm]	15	20	25	32	40	50	65	80	100	125
DN [inch]	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"
Ch	46	46	46	46	55	55	55	55	55	55
Q	232.5	232.5	232.5	232.5	272.5	272.5	350	350	350	350
V	65	65	65	65	90	90	125	125	125	125
kg	1	1	1	1	1.5	1.5	2.7	2.7	2.7	2.7



# ChemBall | CSB

## Actuation | Manual Gearbox | Standard



### Configuration

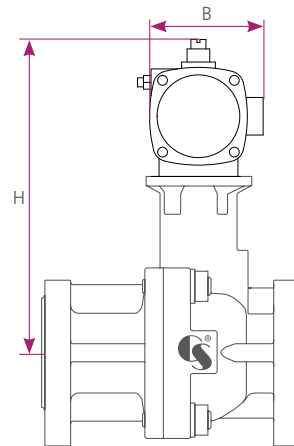
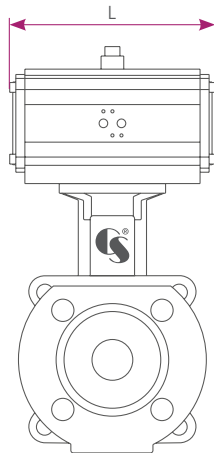
<b>Valve Size</b>	DN025–700
<b>Protection Rating</b>	IP67
<b>Stem Connection</b>	P4

### Materials

<b>Gearcase and Cover</b>	Cast Iron
<b>Quadrant</b>	Ductile Iron
<b>Worm</b>	Carbon Steel
<b>Input Shaft</b>	Carbon Steel
<b>Seals</b>	Nitrile Rubber
<b>Fasteners</b>	Zinc Plated Alloy Steel
<b>Indicator</b>	Stainless Steel
<b>Handwheel   DN025–300</b>	Cast Iron
<b>Handwheel   DN350–700</b>	Carbon Steel

DN [mm]	15	20	25	32	40	50	65	80	100	125	150	200
DN [inch]	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
C <sub>g</sub>	40	40	40	40	40	40	50	50	50	50	60	60
Q	9	9	9	9	9	9	139	139	139	139	212	212
ØR	101	102	103	104	105	106	200	201	202	203	300	301
S	66	66	66	66	66	66	92	92	92	92	115	115
T	52	52	52	52	52	52	63	63	63	63	84	84
U	34	34	34	34	34	34	41	41	41	41	55	55
V	30	30	30	30	30	30	38	38	38	38	48	48
kg	1.3	1.3	1.3	1.3	1.3	1.3	2.4	2.4	2.4	2.4	4.7	4.7





**Double-acting pneumatic actuator\***

DN [mm]	DN [inch]	Code	L [mm]	B [mm]	H [mm]	W [kg]
15	½"	ADA40	158	91	217.5	2.1
20	¾"	ADA40	158	91	220	2.1
25	1"	ADA40	158	91	222.5	2.1
32	1¼"	ADA40	158	91	230	2.1
40	1½"	ADA80	177	111	288	3
50	2"	ADA80	177	111	293	3
65	2½"	ADA130	196	122	349	3.8
80	3"	ADA130	196	122	349	3.5
100	4"	ADA300	273	153	396	8.5
125	5"	ADA300	273	153	421	8.5
150	6"	ADA850	372	191.5	481	16.9
200	8"	ADA850	372	191.5	506	16.9

\*Control Pressure 6.0 bar

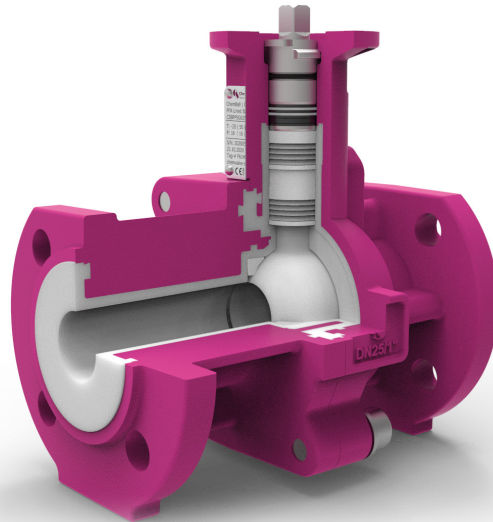
**Single-acting pneumatic actuator\***

DN [mm]	DN [inch]	Code	L [mm]	B [mm]	H [mm]	W [kg]
15	½"	ADA40	158	91	217.5	2.1
20	¾"	ADA40	158	91	220	2.1
25	1"	ADA40	158	91	222.5	2.1
32	1¼"	ADA40	158	91	230	2.1
40	1½"	ADA80	177	111	288	3
50	2"	ADA80	177	111	293	3
65	2½"	ADA130	196	122	349	3.8
80	3"	ADA130	196	122	349	3.5
100	4"	ADA300	273	153	396	8.5
125	5"	ADA300	273	153	421	8.5
150	6"	ADA850	372	191.5	481	16.9
200	8"	ADA850	372	191.5	506	16.9

\*Control Pressure 6.0 bar

# ChemBall | CSB

Order Code



## Order Code

Code Example: CSBPBSPPSI----25P4F05EEA

Design		Actuation		Ball		Chevrons & Ball Seals		Pressure Package		Body		Size	Stem End		F2F Length		Flange	
Code	Model	Code	Device	Code	Material	Code	Material	Code	Material	Code	Material	mm/ inch	Code	Shape	Code	Standard	Code	Pressure Class
P	Premium	BS	Bare Shaft	P	PFA/ 1.4404	P	PTFE	S	PTFE/ Steel	I	PFA/ 5.3103	015-200 / 1/2"-8"	P4	Square Parallel	E	EN	E1	PN10
S	Standard	HS	Hand Lever										P2	Double D	A	ANSI	E2	PN16
		GP	Gearbox Premium										D4	Square Diagonal			EA	PN 10-16
		GS	Gearbox Standard														A1	ANSI 150
																	J0	JIS10K



**PTFE Lined Butterfly Valve**

For advanced chemical applications  
 DN 25–1200  
 PN 10–16 | Class 150 | JIS 10K  
 EN 558, Series 20

**ChemFlyer | CST**





**Xtreme Disc Check Valve**

DN 15–100  
 PN 10–16 | Class 150 | JIS 10K  
 EN 558, Series 52

**PrimeDisc X | DSF**




**NEW**



**PFA Lined Ball Valve**

Patented TrueFloat® Technology  
 DN 15–200  
 PN 10–16 | Class 150 | JIS 10K  
 EN 558, Series 1  
 ASME B16.10, Table 1, Row 19

**ChemBall | CSB**




**Swing Check Valve**

DN 50–1000  
 PN 10–40 | Class 150–300  
 EN 558, Series 97

**PrimeSwing | CSC**




**PTFE Disc Check Valve**

DN 15–150  
 PN 10–16 | Class 150 | JIS 10K  
 EN 558, Series 52

**ChemDisc | DTEF**




**Dual Plate Check Valve**

DN 50–1000  
 PN 10–40 | Class 150–300 | JIS 10K  
 EN 558, Series 16

**Prime2Disc | DDC**



**ECO**



**Nozzle Check Valve**

Energy saving design  
 DN 15–300  
 PN 10–40 | Class 150–300 | JIS 10K  
 EN 558, Series 52/14

**PrimeNozzle | CSL**




**Strainer**

DN 15–300  
 PN 6–40  
 EN 558, Series 49/52

**PrimeFilter | CSF**




**Standard Disc Check Valve**

DN 15–350  
 PN 6–40, Class 150–300 | JIS 10K  
 EN 558, Series 49/52

**PrimeDisc S | CSD/CVD**




**Resilient Seated Butterfly Valve**

For advanced industrial applications  
 DN 15–1600  
 PN 10–16, Class 150  
 EN 558, Series 20

**PrimeFlyer | CSR**



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