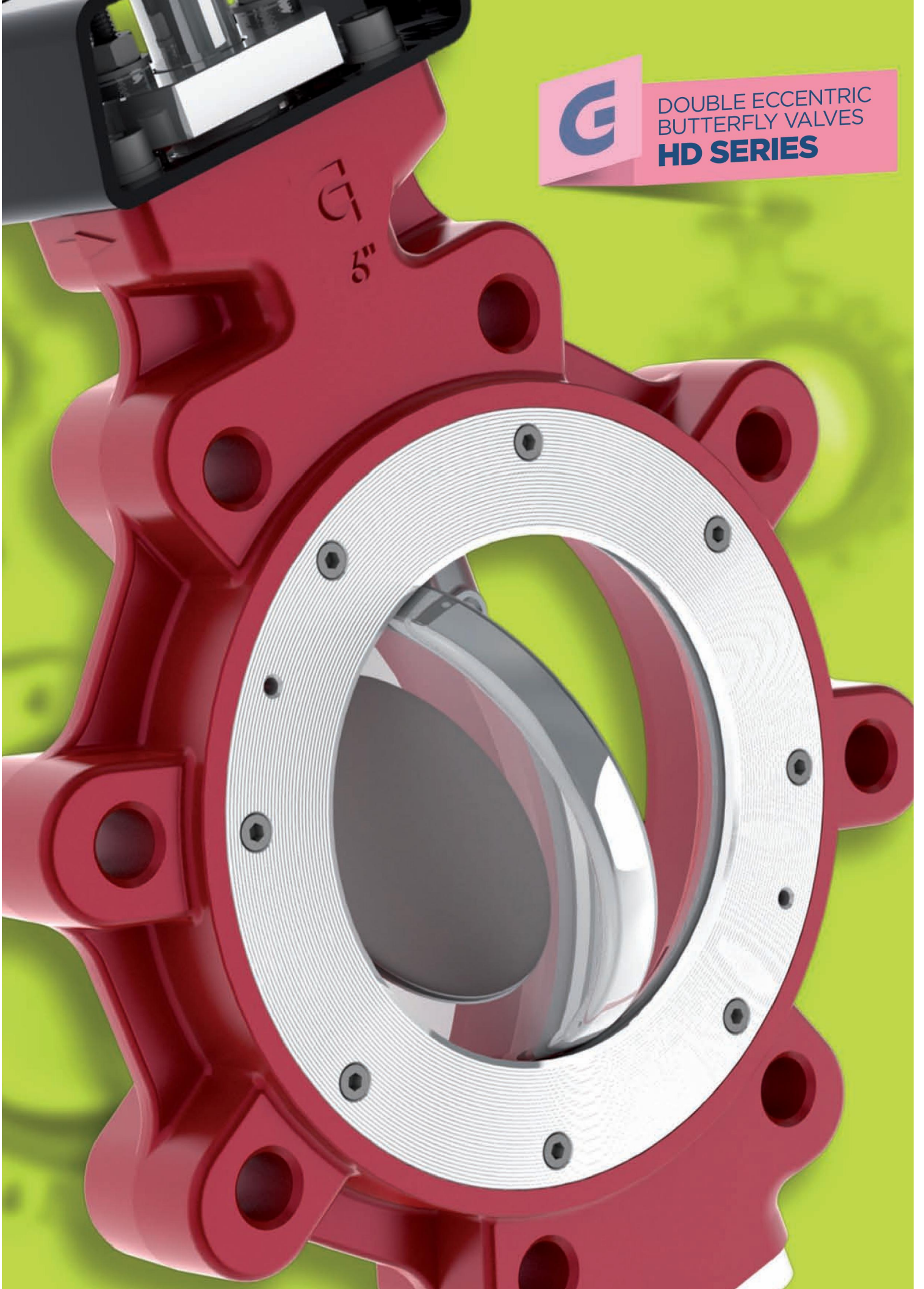




DOUBLE ECCENTRIC  
BUTTERFLY VALVES  
**HD SERIES**

G  
5"





## DOUBLE ECCENTRIC BUTTERFLY VALVES HD SERIES

**BVHD - WAFER**  
RN 50-300 • 2"-12"

**BLHD - LUG**  
RN 50-300 • 2"-12"

Twin seats of Ballaulla usebare ensure the sealing along valve shafts even at high temperatures. The thrust of the twin seats is transmitted in the packing through a flaring gland to avoid that a possible expansion of the components could damage this sealing.



Detail of the RTFE seat



Detail of the metallic seat

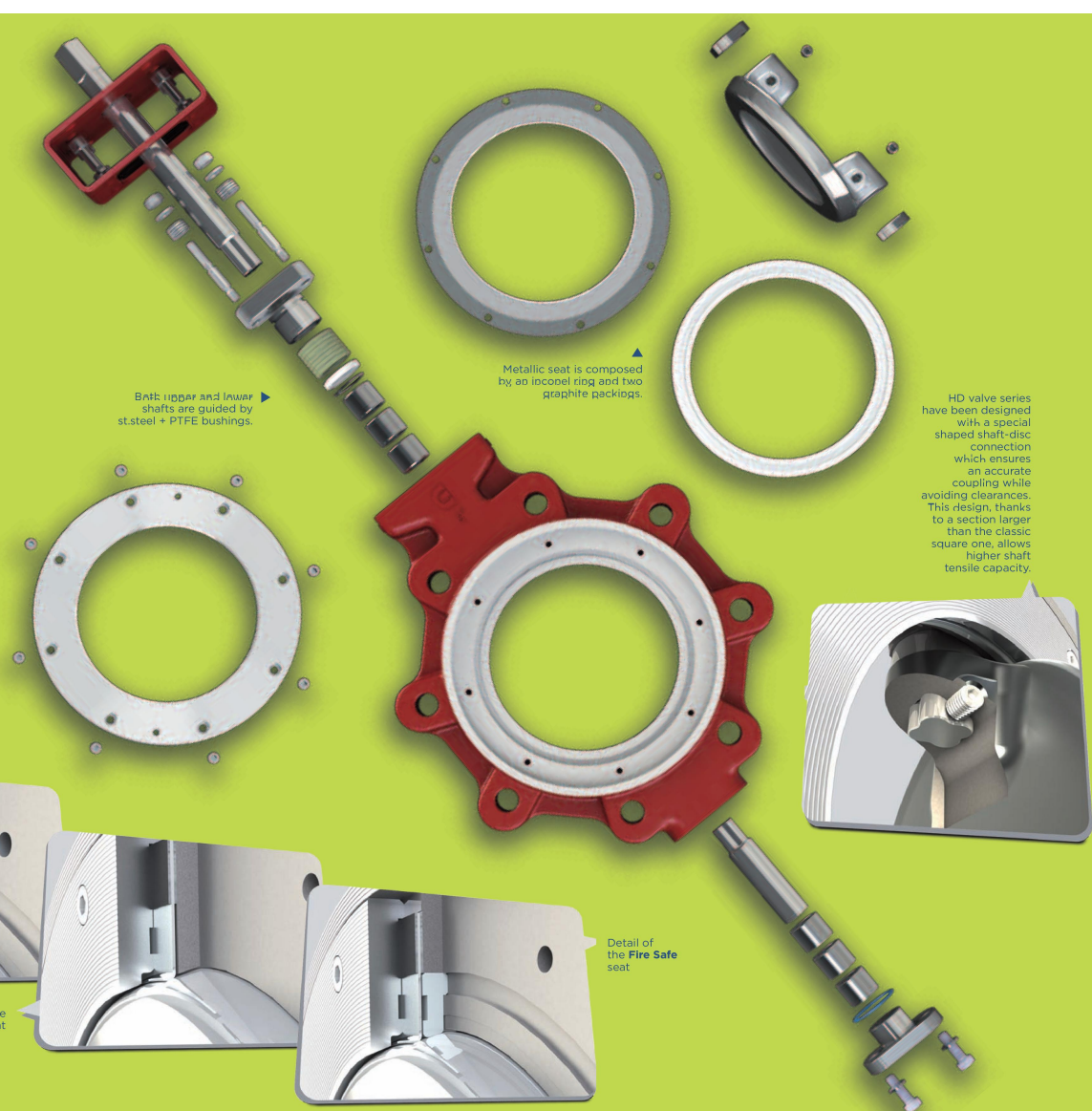


Detail of the Fire Safe seat

Both upper and lower shafts are guided by stainless steel + PTFE bushings.

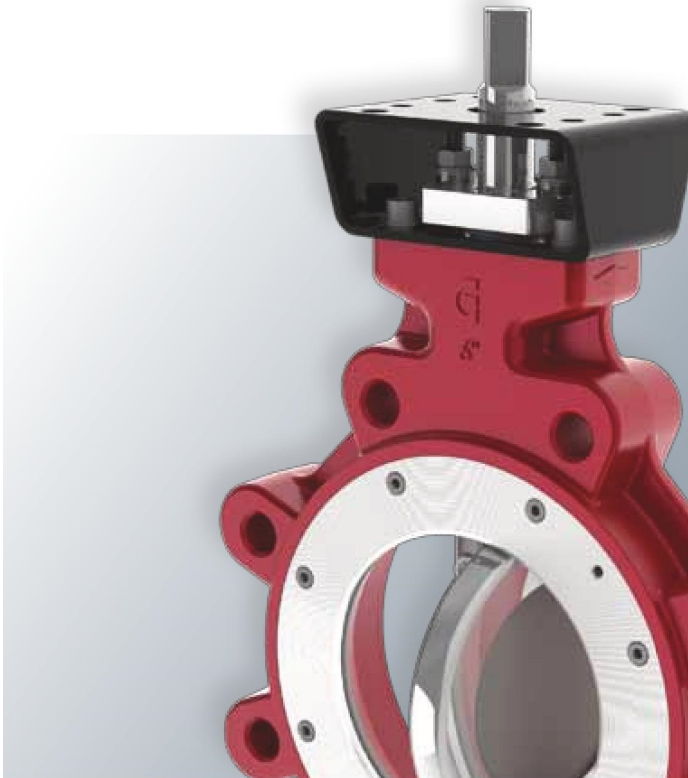
Metallic seat is composed by an Inconel ring and two graphite packings.

HD valve series have been designed with a special shaped shaft-disc connection which ensures an accurate coupling while avoiding clearances. This design, thanks to a section larger than the classic square one, allows higher shaft tensile capacity.





## HD series



### DOUBLE ECCENTRIC

#### HD Series

- |                        |   |
|------------------------|---|
| • technical data       | 1 |
| • components DN 50-300 | 2 |
| RTFE seat              | 2 |
| Inconel seat           | 3 |
| "FIRE SAFE" seat       | 4 |



### TABLES

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| • dimensions             | 5 |
| • torque values          | 6 |
| • pressure / temperature | 6 |
| • tests                  | 6 |

### Gearboxes

7

**BVHD** - Wafer **BLHD**- Lug  
DN 50 - 300 • 2" - 12"

Max working pressure:

BVHD/BLHD DN 50÷300: **25 Bar**  
Flanges: DN 50 ÷ 250: **PN 10-16-25•A150**  
DN 300: **PN 10-16•A150**

Design:

EN 593~EN 736  
EN 12516~EN 1092~EN12266  
ISO 5211~DIN 3337~API 609~ASME B16.34  
PED 97/23/EC (cat III) Mod H

Face to face:

DIN EN 558-1 Series 20~ISO 5752 Series 20  
BS-5155 Series 4~MSS-SP67  
API 609 cat.A~NFE 29305-1

Testing:

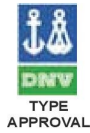
EN 12266-1 Rate A ~ ISO 5208 Rate A  
DIN 3230 ~ API 598  
FIRE TEST API607 VI Ed. September

Tag:

EN 19 ~ MSS SP-25



All valves are supplied with a metallic label in compliance with PED directive.



**BODY**

material	references	standard coating	DN
Carbon steel (wafer, lug)	ASTM A216-WCB	High-temp coating grey color	50-300
Stainless steel (wafer, lug)	ASTM A351 CF8M (A316)	-	50-300
DUPLEX	ASTM A890 Gr. 4A	-	50-300
SUPERDUPLEX	ASTM A890 Gr. 5A	-	50-300

**DISC**

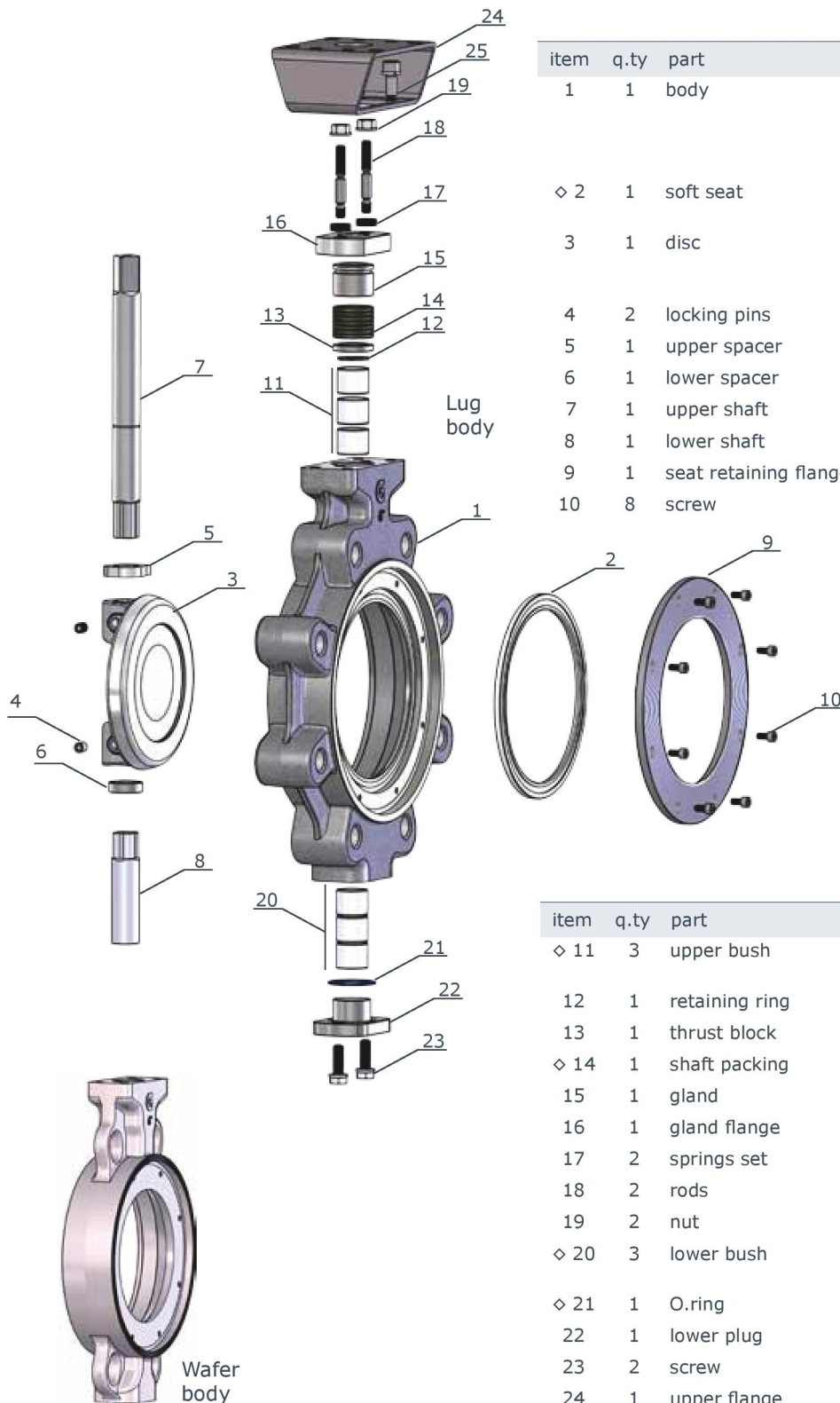
material	references	DN
Stainless steel	ASTM A351 CF8M (A316)	50-300
DUPLEX	ASTM A890 Gr. 4A	50-300
SUPERDUPLEX	ASTM A890 Gr. 5A	50-300

**BODY SEAT**

ref.	material	working temp.
RT	RTFE (PTFE reinforced)	-60°C / +230°C
MT	Inconel 625	-60°C / +450°C

On request can be supplied other materials as: LCB, Hastelloy, Monel, Uranus, Alloy, DUPLEX, Special steels, Special bronzes.  
Coating on request: RILSAN®, Halar®, Chenisil®

**BVHD** - Wafer **BLHD** - Lug • RTFE seat  
 DN 50 - 300 • 2" - 12"  
 PN 10 - 16 - 25 • ANSI 150

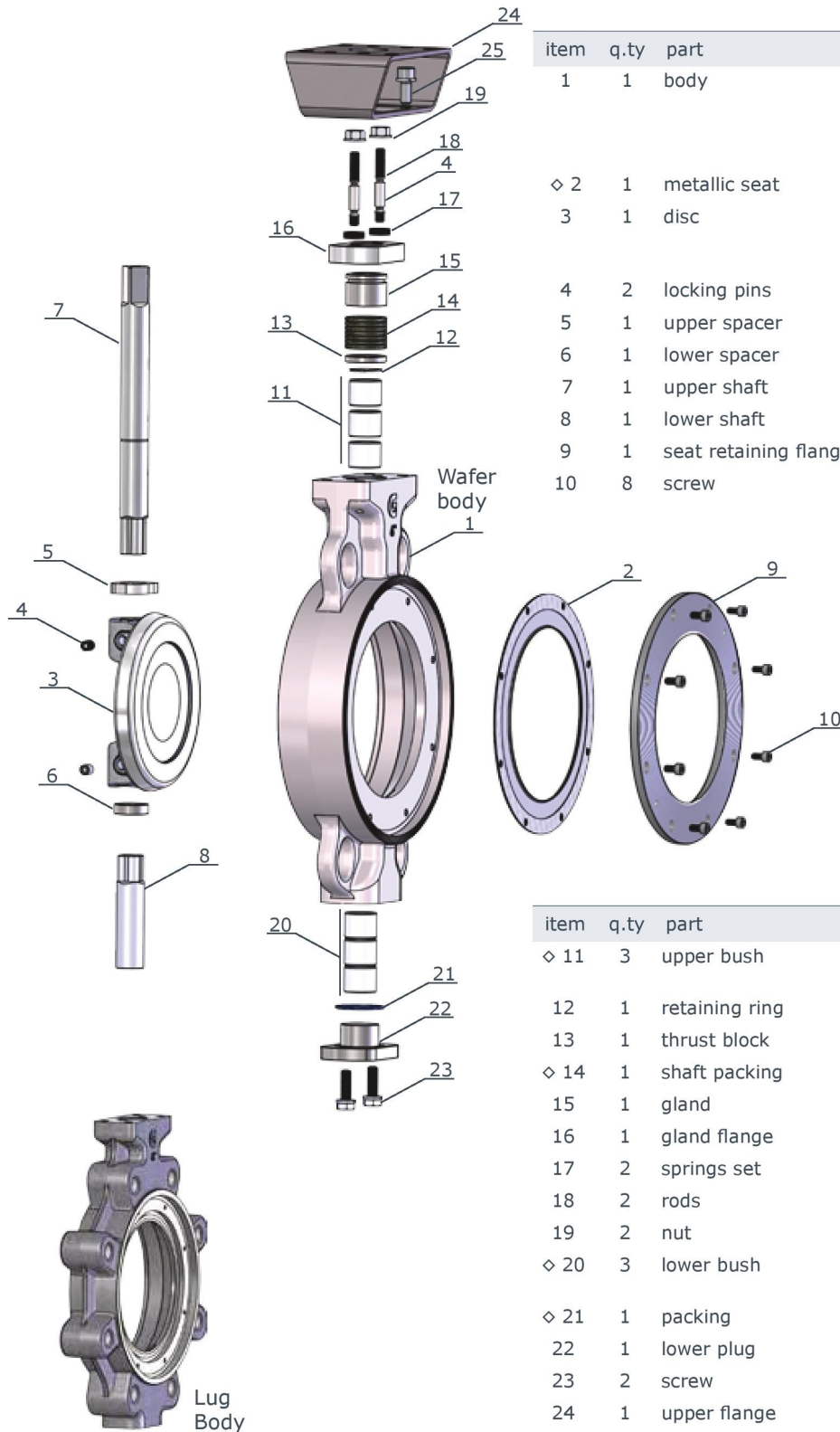


item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>• A216 - WCB</li> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
◇ 2	1	soft seat	<ul style="list-style-type: none"> <li>• PTFE</li> <li>• RTFE (PTFE reinforced)</li> </ul>
3	1	disc	<ul style="list-style-type: none"> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
4	2	locking pins	• AISI316
5	1	upper spacer	• AISI316
6	1	lower spacer	• AISI316
7	1	upper shaft	• ASTM A564 Gr630
8	1	lower shaft	• ASTM A564 Gr630
9	1	seat retaining flange	• AISI 316
10	8	screw	• AISI 316

item	q.ty	part	material
◇ 11	3	upper bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
12	1	retaining ring	• A 316
13	1	thrust block	• A 316
◇ 14	1	shaft packing	• graphite
15	1	gland	• AISI316
16	1	gland flange	• AISI316
17	2	springs set	• stainless steel
18	2	rods	• AISI 316
19	2	nut	• AISI 316
◇ 20	3	lower bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
◇ 21	1	O.ring	• PTFE
22	1	lower plug	• AISI 316
23	2	screw	• AISI 316
24	1	upper flange	• steel epoxy coated
25	4	screw	• AISI 316

◇ parts included in spare kit

**BVHD** - Wafer **BLHD** - Lug • Inconel seat  
 DN 50 - 300 • 2" - 12"  
 PN 10 - 16 - 25 • ANSI 150



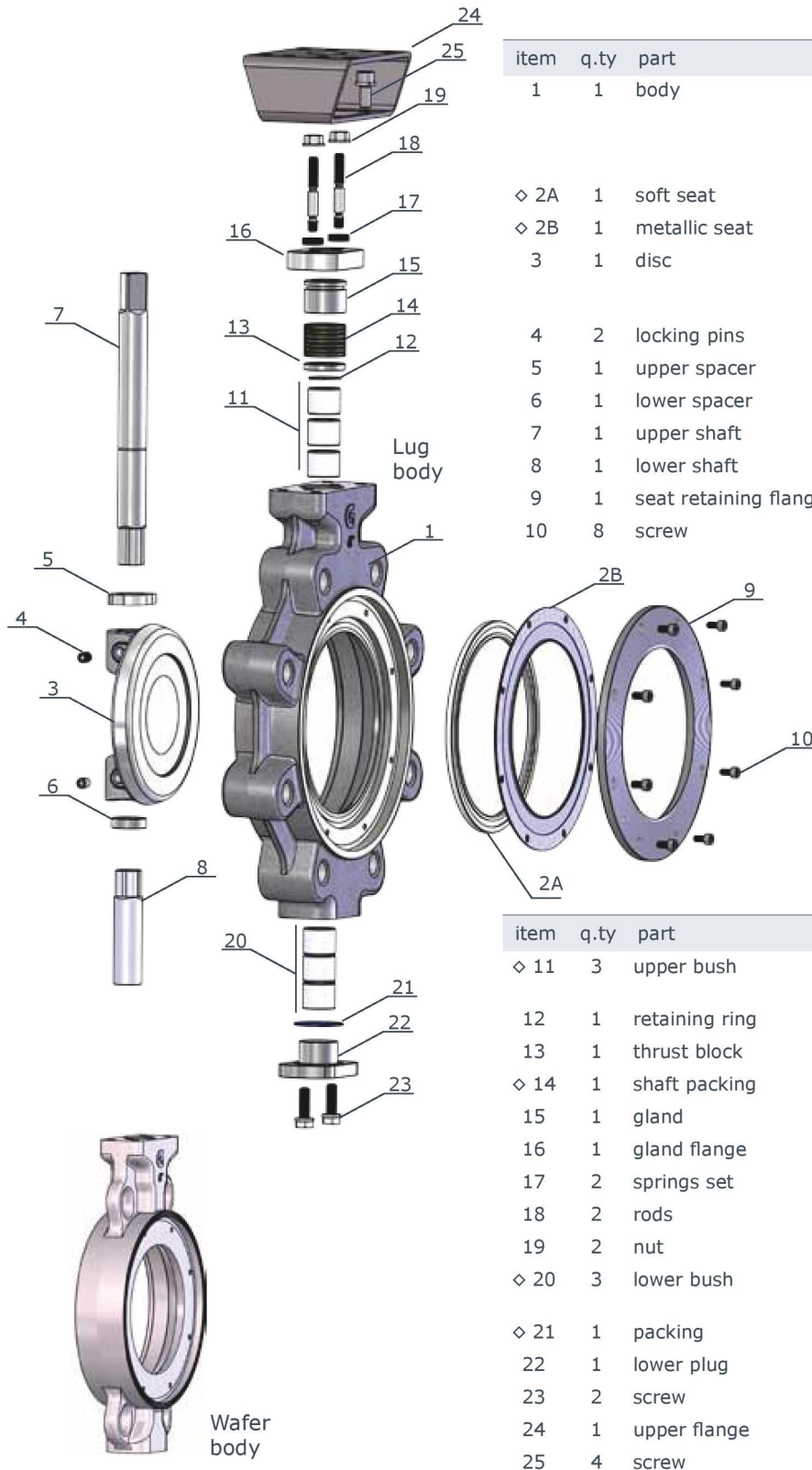
item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>• A216 - WCB</li> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
◇ 2	1	metallic seat	• Inconel 625 + graphite
3	1	disc	<ul style="list-style-type: none"> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
4	2	locking pins	• AISI316
5	1	upper spacer	• AISI316
6	1	lower spacer	• AISI316
7	1	upper shaft	• ASTM A564 Gr630
8	1	lower shaft	• ASTM A564 Gr630
9	1	seat retaining flange	• AISI 316
10	8	screw	• AISI 316

item	q.ty	part	material
◇ 11	3	upper bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
12	1	retaining ring	• A 316
13	1	thrust block	• A 316
◇ 14	1	shaft packing	• graphite
15	1	gland	• AISI316
16	1	gland flange	• AISI316
17	2	springs set	• stainless steel
18	2	rods	• AISI 316
19	2	nut	• AISI 316
◇ 20	3	lower bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
◇ 21	1	packing	• graphite
22	1	lower plug	• AISI 316
23	2	screw	• AISI 316
24	1	upper flange	• steel epoxy coated
25	4	screw	• AISI 316

◇ parts included in spare kit



**BVHD** - Wafer **BLHD** - Lug • "FIRE SAFE" seat  
 DN 50 - 300 • 2" - 12"  
 PN 10 - 16 - 25 • ANSI 150

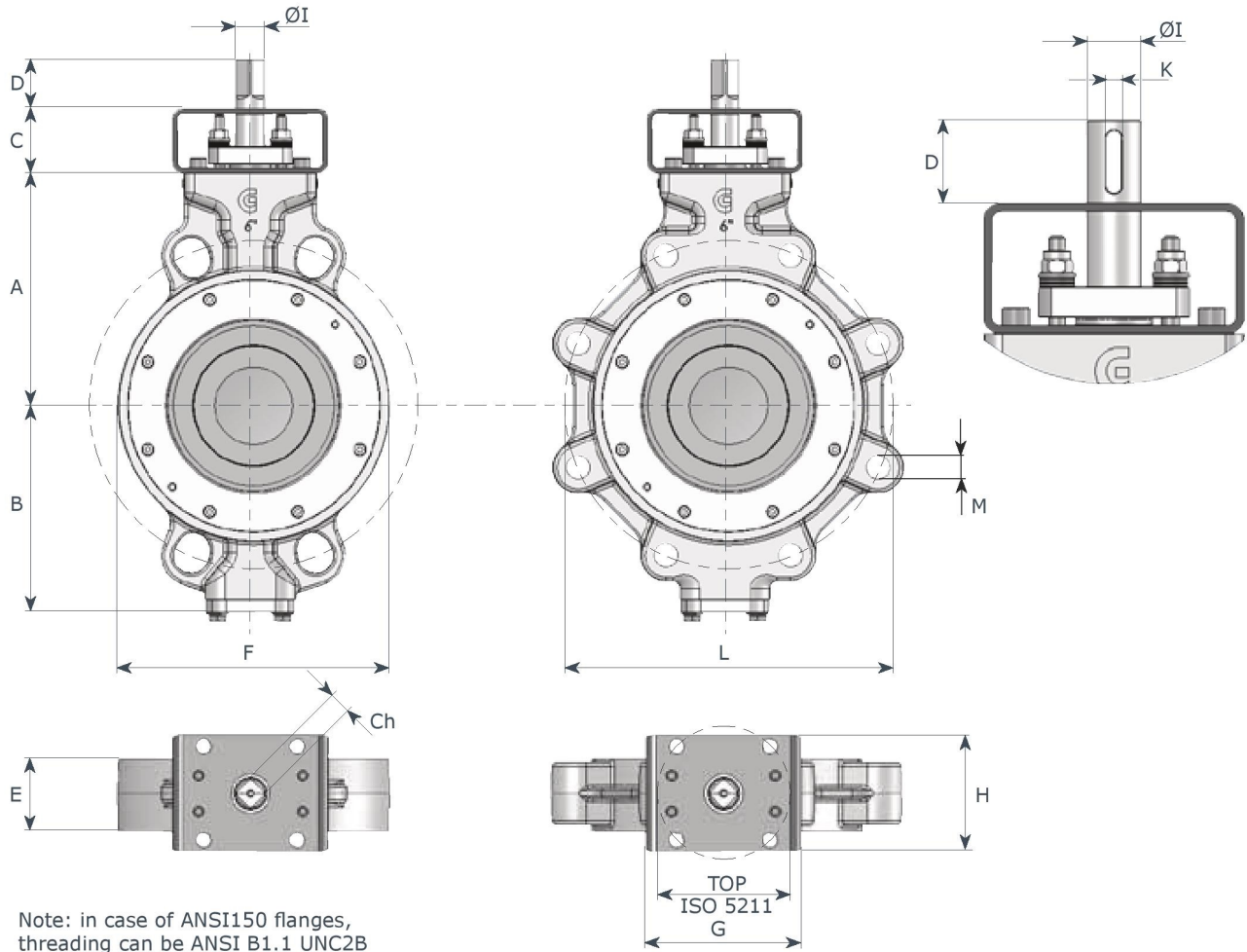


item	q.ty	part	material
1	1	body	<ul style="list-style-type: none"> <li>• A216 - WCB</li> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
◇ 2A	1	soft seat	• RTFE (PTFE reinforced)
◇ 2B	1	metallic seat	• Inconel 625 + graphite
3	1	disc	<ul style="list-style-type: none"> <li>• A351 - CF8M (AISI 316)</li> <li>• ASTM A890 Gr.4A(DUPLEX)</li> <li>• ASTM A890 Gr.5A(S.DUPLEX)</li> </ul>
4	2	locking pins	• AISI316
5	1	upper spacer	• AISI316
6	1	lower spacer	• AISI316
7	1	upper shaft	• ASTM A564 Gr630
8	1	lower shaft	• ASTM A564 Gr630
9	1	seat retaining flange	• AISI 316
10	8	screw	• AISI 316

item	q.ty	part	material
◇ 11	3	upper bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
12	1	retaining ring	• A 316
13	1	thrust block	• A 316
◇ 14	1	shaft packing	• graphite
15	1	gland	• AISI316
16	1	gland flange	• AISI316
17	2	springs set	• stainless steel
18	2	rods	• AISI 316
19	2	nut	• AISI 316
◇ 20	3	lower bush	<ul style="list-style-type: none"> <li>• stainless steel + PTFE</li> <li>• steel + PTFE</li> </ul>
◇ 21	1	packing	• graphite
22	1	lower plug	• AISI 316
23	2	screw	• AISI 316
24	1	upper flange	• steel epoxy coated
25	4	screw	• AISI 316

◇ parts included in spare kit

BVHD/BLHD dimensions



Note: in case of ANSI150 flanges, threading can be ANSI B1.1 UNC2B

DN	"	A	B	C	D	E	F	G	H	Ø I	Ch	K	TOP
50	2	117	81	50	34	43	95	100	70	14	11	-	F07
65	2 <sup>1/2</sup>	120	93	50	34	46	105	100	70	14	11	-	F07
80	3	129	101	50	34	46	127	100	70	14	11	-	F07
100	4	160	128	50	34	52	150	100	70	18	14	-	F07
125	5	170	159	50	38	56	174	120	90	22	17	-	F10
150	6	179	168	50	38	56	210	120	90	22	17	-	F10
200	8	218	207	60	40	61	270	120	90	25	-	8	F10
250	10	257	232	80	60	69	325	160	130	30	-	10	F12
300	12	300	270	80	60	78	378	160	130	35	-	10	F12

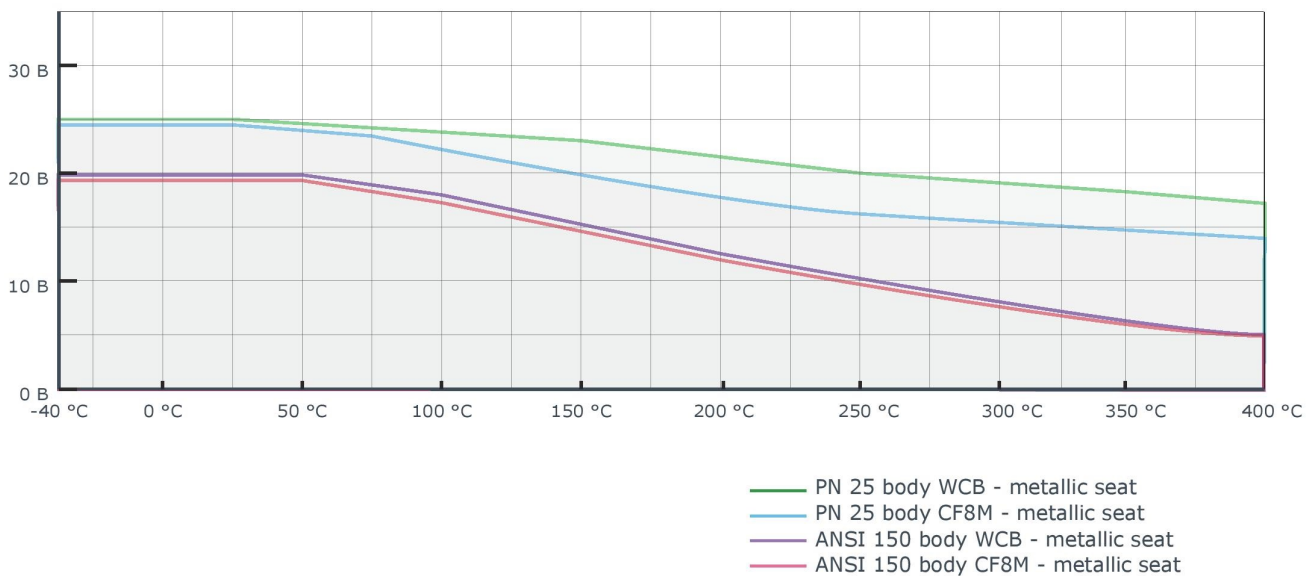
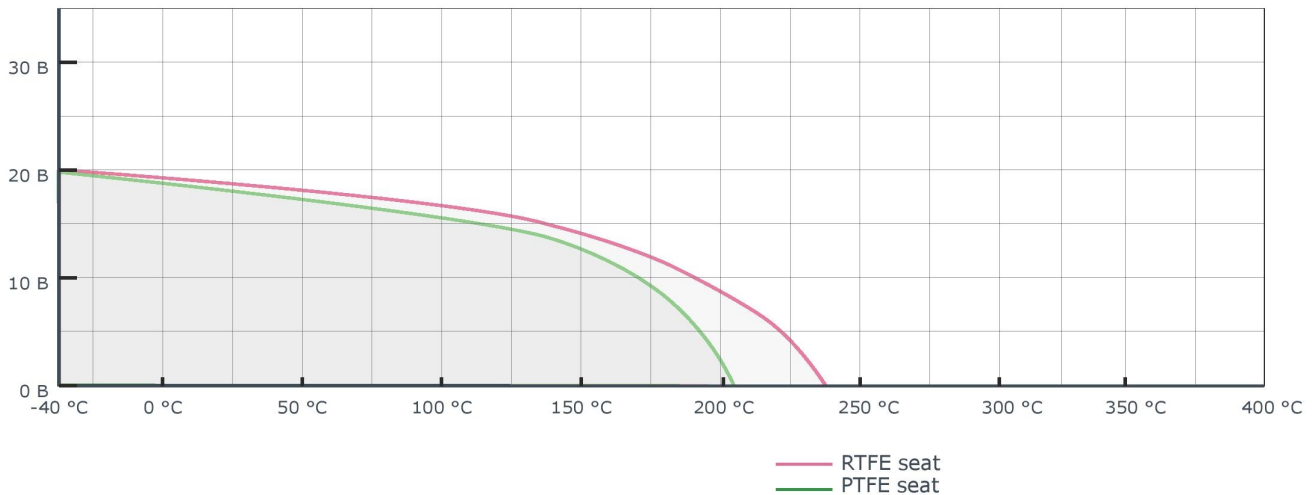
DN	PN 10			PN 16			PN 25			ANSI 150			Kg.	
	M	n.	L	M	n.	L	M	n.	L	M	n.	L	wafer	lug
50	M16	4	125	M16	4	125	M16	4	125	M16	4	120.6	3.5	5.7
65	M16	8	145	M16	8	145	M16	8	145	M16	4	139.7	4.0	7
80	M16	8	160	M16	8	160	M16	8	160	M16	4	152.4	4.8	7.6
100	M16	8	180	M16	8	180	M20	8	190	M16	8	190.5	8	9.7
125	M16	8	210	M16	8	210	M24	8	220	M20	8	215.9	10.1	14.8
150	M20	8	240	M20	8	240	M24	8	250	M20	8	241.3	13.5	17.6
200	M20	8	295	M20	12	295	M24	12	310	M20	8	298.4	22	42.6
250	M20	12	350	M24	12	355	M27	12	370	M22	12	361.9	35	46
300	M20	12	400	M24	12	410	≈	≈	≈	M22	12	431.8	50	62



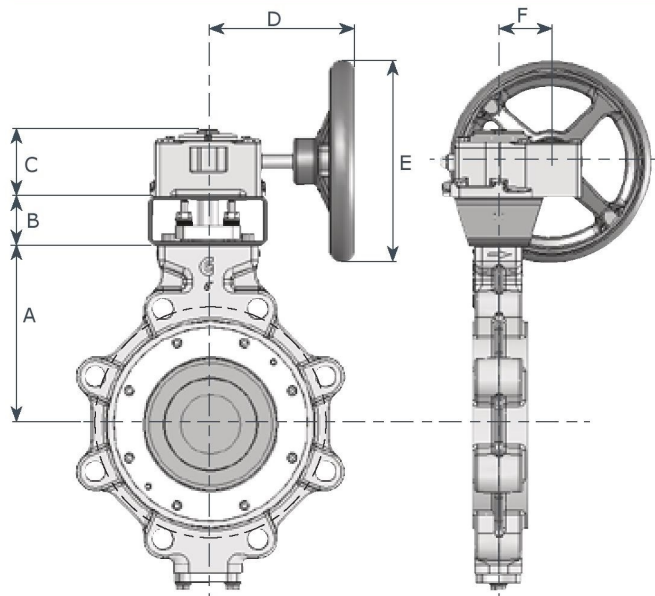
## HD Series - Torque values - Nm

seat: RTFE fluid: H <sub>2</sub> O - 20°C					seat: INCONEL fluid: H <sub>2</sub> O - 20°C				
working pressure: BAR					working pressure: BAR				
DN	10	16	20	25	DN	10	16	20	25
50	24	30	40	47	50	36	44	58	68
65	34	38	48	60	65	51	56	70	86
80	38	45	54	68	80	57	67	78	97
100	45	56	62	81	100	68	83	89	114
125	85	90	105	120	125	124	133	154	168
150	130	145	170	210	150	186	212	248	302
200	180	240	270	390	200	261	350	392	570
250	330	450	520	580	250	480	668	765	848
300	580	640	740	850	300	848	941	1085	1244

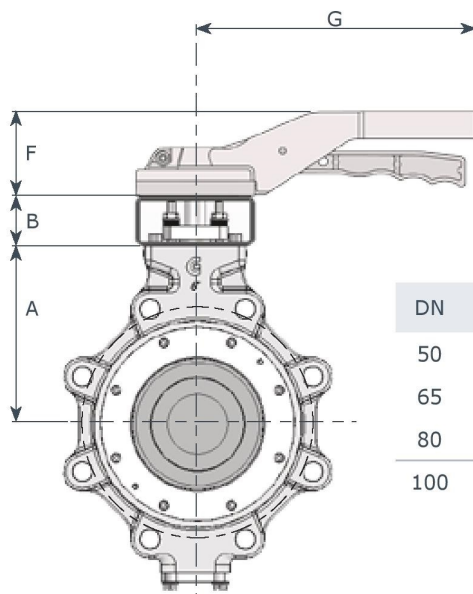
## Pressure / Temperature



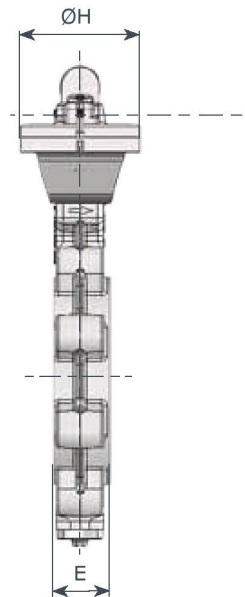
Gearboxes



DN	"	A	B	C	D	E	F	type
50	2	117	50	55	134	200	43	AB150
65	2 1/2	120	50	55	134	200	43	AB150
80	3	129	50	55	134	200	43	AB150
100	4	160	50	55	134	200	43	AB150
125	5	170	50	63	197	200	52	AB215
150	6	179	50	63	197	200	52	AB215
200	8	218	60	63	197	200	52	AB215
250	10	257	80	88	292	300	71	AB550
300	12	300	80	88	292	300	71	AB550



DN	"	A	B	E	F	G	ØH
50	2	117	50	43	67	220	93
65	2 1/2	120	50	46	67	220	93
80	3	129	50	46	67	220	93
100	4	160	50	52	67	275	93



Test

valves are built according to following international standards:

Body test pressure: DIN 3230BA - API598  
 Hydraulic test pressure: DIN 3230BN1 - API598  
 Pneumatic test pressure: DIN 3230BO1 - API598  
 Test certificates: UNI EN 10204 2.2 (standard)  
 UNI EN 10204 3.1 (on request)  
 UNI EN 10204 3.2 (on request)

DIN	body test	hydraulic test	pneu test
3230			
PN6	9 bar	7 bar	6 bar
PN10	15 bar	11 bar	6 bar
PN16	24 bar	17,6 bar	6 bar
PN25	38 bar	27,5 bar	6 bar

Test duration is indicated by API598 standard

Body test pressure: < DN 65 = 15 sec.  
 DN 65 / DN 200 = 80 sec.  
 > DN 200 = 180 sec.

Hydraulic test pressure: < DN 65 = 15 sec.  
 DN 65 / DN 200 = 30 sec.  
 > DN 200 = 60 sec

Pneumatic test pressure: < DN 65 = 15 sec.  
 DN 65 / DN 200 = 30 sec.  
 > DN 200 = 60 sec

API598	body test	hydraulic test
ANSI125	21 bar	18 bar
ANSI150	30 bar	22 bar
ANSI300	78 bar	58 bar