

**Metal seal**  
**Ball valve**  
**Flange**  
**PN16-40**  
**DN15-300**

### Range of application:

In industrial facilities, oil and chemical industry and related manufacturing industries

### Temperature range:

related to the pressure : -60°C to +400°C

### Perform standard:

Design: split body with full bore round port.

acc. AD 2000 A4/ ATEX 2014/34/EU /DIN 3357 .

Flange connection : Flange dimension:DIN EN 1092-1.

Operating: with a two flat stem acc to the NAMUR-recommends.

90° -rotary switch

Actuator mounting: mounting flange acc. to DIN ISO5211 for gear box , air- , electric-or hydraulic pattern actuator .

Fire test : API 607 & BS 6755 .

Antistatic device acc.: BS 5351 .

Preloaded belleville spring design for stem sealing system, offers the possibility of manual adjustment of the sealing.

### Material [ according DIN EN (DIN) ]

Body: —1.0619N  
 —1.4408  
 —Hastelloy B3  
 Ball: —1.4301+ Coating  
 —1.4401/1.4404+ Coating  
 —Hastelloy B3+DLC  
 Body Seal: — Graphite  
 Seat: —1.4301+ Coating  
 —1.4401/1.4404+ Coating  
 —Hastelloy B3+DLC

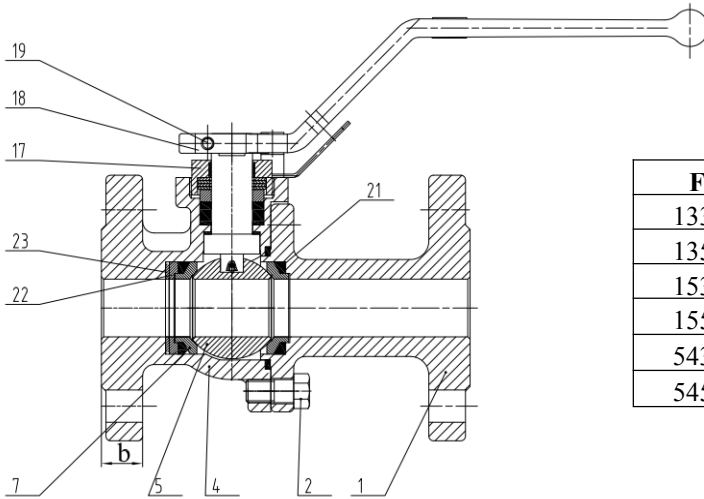
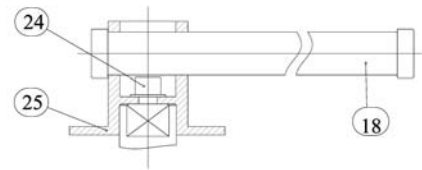


FIG.	Pressure	Material	RANGE
133.753	PN16	1.0619N	DN15-DN150
135.753	PN40	1.0619N	DN15-DN150
153.753	PN16	1.4408	DN15-DN150
155.753	PN40	1.4408	DN15-DN150
543.753	PN16	Hastelloy B3	DN15-DN150
545.753	PN40	Hastelloy B3	DN15-DN150



Ball valve with full bore and Flange.

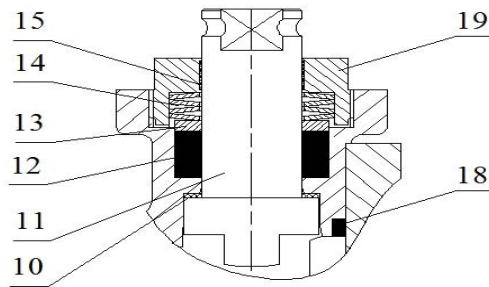
DN125-150

**Material list**

NO.	Part	Material		
		FIG. 153.753 / 155.753	FIG. 133.753 / 135.753	FIG. 543.753 / 545.753
1	Adapter	1.4408	1.0619N	Hastelloy B3
2	Bolts	A4-70	40CrMo4	Hastelloy B3+FCC
4	Body	1.4408	1.0619N	Hastelloy B3
5	Ball	1.4401/1.4404/1.4571 + Coating *	1.4301+ Coating *	Hastelloy B3+DLC
7	Seat	1.4401/1.4404/1.4571+ Coating *	1.4301+ Coating *	Hastelloy B3+DLC
17	Nut	1.4401	45	1.4401
18	Lever	1.4308(DN≤100) / C45 Galvanization (DN>100)	GGG40(DN≤100) / C45 (DN>100)	1.4308(DN≤100) / C45 Galvanization (DN>100)
19	Bolts	A2-70	35	A4-70
21	Sealing ring	Graphite	Graphite	Graphite
22	Seat retainer	1.4401	1.4301	Hastelloy B3
23	Spring washer	17-7PH	17-7PH	Inconel X-750
24	Bolt	A2	35	Hastelloy B3
25	Switch	1.4308	1.0619N	1.4308

\* coating options: Electroplated Hard Chrome/ Tungsten carbide /Chrome carbide /Carbide HVOF /Nickel-based alloy

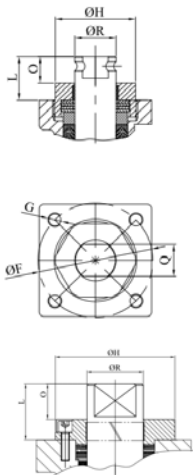
Stopfbuchs-Variante



Material list

NO.	Part	Material		
		FIG. 153.753 / 155.753	FIG. 133.753 / 135.753	FIG. 543.753 / 545.753
10	Stem sealing	Graphite/PTFE+Graphite /	Graphite/PTFE+Graphite /	Hastelloy B3+DLC
11	Stem	17-4PH / 1.4462/1.4980	17-4PH / 1.4462/1.4980	Hastelloy B3
12	Packing	Graphite	Graphite	Graphite
13	Press ring	1.4401	1.4401	1.4401
14	Belleville	17-7PH	17-7PH	Inconel X-750
15	Bearing	PTFE+Carbon / E-Carbon/1.4301	PTFE+Carbon / E-Carbon/1.4301	PEEK+Carbon
18	Body seal	Graphite	Graphite	Graphite
19	Nut	1.4401	1.4401	1.4401

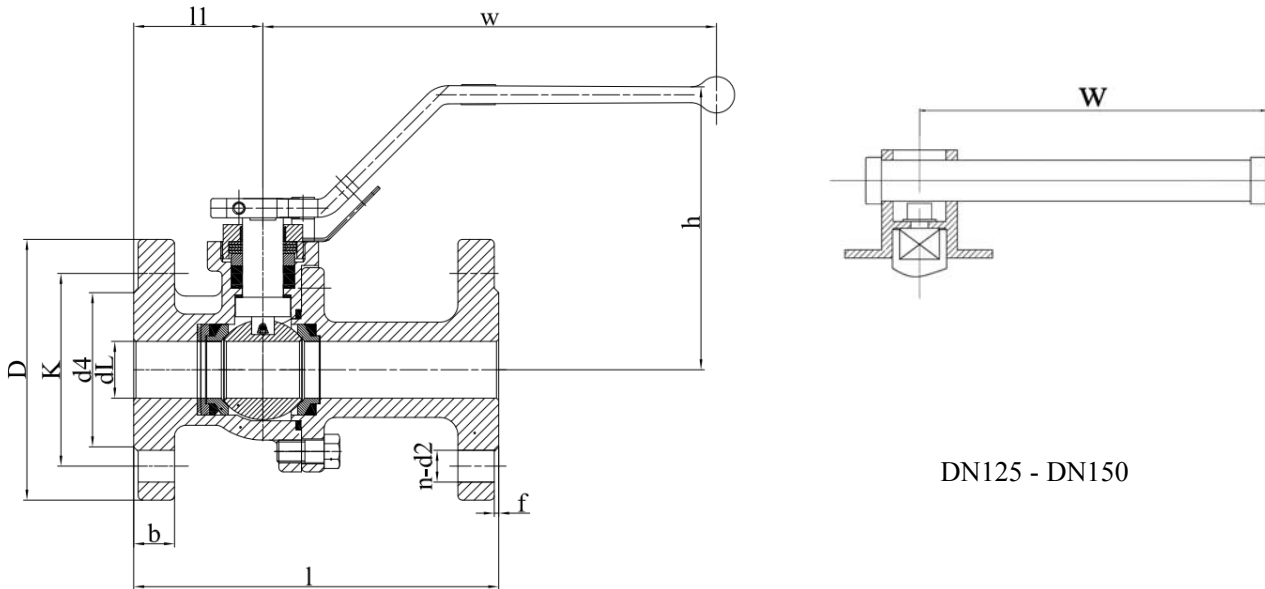
Dimension list



DN	15	20	25	32	40	50	65	80	100	125	150
ΦF	50	50	50	50	70	70	70	102	102	125	125
G	M6	M6	M6	M6	M8	M8	M8	M10	M10	M12	M12
ΦH	35	35	35	35	55	55	55	70	70	85	85
L	17	17	19	19	29	28	27.5	32	33	41	41
O	11	11	11.5	11.5	18.5	17.5	17	21.5	21.8	26.5	26.5
Q	9	9	14	14	17	17	17	19	19	27	27
ΦR	11.8	11.8	18	18	21.8	21.8	21.8	25.8	25.8	40	40
ISO 5211	F05	F05	F05	F05	F07	F07	F07	F10	F10	F12	F12

DN125~150

FIG.	Pressure	Material	RANGE
133.753	PN16	1.0619N	DN15-DN150
135.753	PN40	1.0619N	DN15-DN150
153.753	PN16	1.4408	DN15-DN150
155.753	PN40	1.4408	DN15-DN150
543.753	PN16	Hastelloy B3	DN15-DN150
545.753	PN40	Hastelloy B3	DN15-DN150

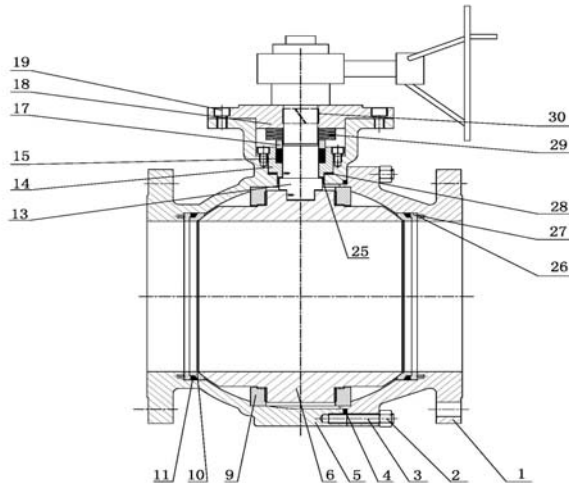


Ball valve with full bore and Flange . Flange end: DIN N 1092-1 Form B ; Face to face: EN558-1 , G27 / G28 .

**Dimension list**

PN	DN	dL	L	L1	h	W	D	b	K	n-d2	d4×f	Weight
16(40)	15	Φ15	115/130	45.5	115	200	Φ95	16	Φ65	4-Φ14	Φ45×2	3.5
	20	Φ20	120/150	50.5	121	200	Φ105	18	Φ75	4-Φ14	Φ58×2	4.4
	25	Φ25	125/160	57	127	220	Φ115	18	Φ85	4-Φ14	Φ68×2	5.3
	32	Φ31	130/180	58	142	220	Φ140	18	Φ100	4-Φ18	Φ78×2	7.2
	40	Φ40	140/200	63.5	151	270	Φ150	18	Φ110	4-Φ18	Φ88×3	9.3
	50	Φ50	150/230	67	157	270	Φ165	20	Φ125	4-Φ18	Φ102×3	13
16	65	Φ65	170/290	71	191	360	Φ185	18	Φ145	4-Φ18	Φ122×3	16.5
	80	Φ77	180/310	83	201	360	Φ200	20	Φ160	8-Φ18	Φ138×3	22.5
	100	Φ100	190/350	87	218	360	Φ220	20	Φ180	8-Φ18	Φ158×3	30.5
	125	Φ125	325	122	241.5	500	Φ250	22	Φ210	8-Φ18	Φ188×3	55
	150	Φ150	350	124	256	650	Φ285	22	Φ240	8-Φ22	Φ212×3	82
40	65	Φ65	170/290	71	191	360	Φ185	22	Φ145	8-Φ18	Φ122×3	18.7
	80	Φ77	180/310	83	201	360	Φ200	24	Φ160	8-Φ18	Φ138×3	23.6
	100	Φ100	190/350	87	218	360	Φ235	24	Φ190	8-Φ22	Φ162×3	34
	125	Φ125	325	122	241.5	500	Φ270	26	Φ220	8-Φ26	Φ188×3	60.5
	150	Φ150	350	124	256	650	Φ300	28	Φ250	8-Φ26	Φ218×3	89

FIG.	Pressure	Material	RANGE
133.753	PN16	1.0619N	DN200-DN300
135.753	PN40	1.0619N	DN200-DN300
153.753	PN16	1.4408	DN200-DN300
155.753	PN40	1.4408	DN200-DN300
543.753	PN16	Hastelloy B3	DN200-DN300
545.753	PN40	Hastelloy B3	DN200-DN300

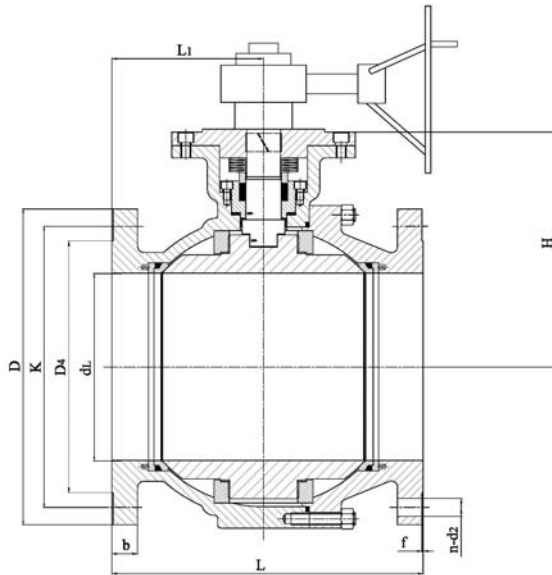


### Material list

NO.	Part	Material		
		FIG. 153.753 / 155.753	FIG. 133.753 / 135.753	FIG. 543.753 / 545.753
1	Adapter	1.4408	1.0619N	Hastelloy B3
2	Nuts	A4-70	42CrMo	A4-70+FCC
3	Bolts	A4-70	42CrMo	A4-70+FCC
4	Body seal	Graphite	Graphite	Inconel625+Graphite
5	Body	1.4408	1.0619N	Hastelloy B3
6	Ball	1.4401/1.4404/1.4571 + Coating *	1.4301+ Coating *	Hastelloy B3+DLC
9	Bracket	1.4408	1.4301	Hastelloy B3
10	Seat	1.4401/1.4404/1.4571 + Coating *	1.4301+ Coating *	Hastelloy B3+DLC
11	Sealing ring	Graphite	Graphite	Graphite
13	Stem	17-4PH / 1.4462/1.4980	17-4PH / 1.4462/1.4980	Hastelloy B3
14	Packing box	1.4408	1.4301	Hastelloy B3
15	Packing	Graphite	Graphite	Graphite
17	Metal-ring	1.4401	1.4301	1.4401
18	Cover	1.4401	C22.8	1.4401
19	Bolts	A4-70	A2-70	A4-70
25	Stem sealing	Graphite/PTFE+Graphite / E-Carbon	Graphite/PTFE+Graphite / E-Carbon	Hastelloy B3+DLC
26	Spring	INCONEL	INCONEL	INCONEL
27	Seat retainer	1.4401	1.4301	Hastelloy B3
28	Gasket	Graphite	Graphite	Graphite
29	Belleville	17-7PH	17-7PH	Inconel X-750
30	Bearing	PTFE+Carbon / E-Carbon/1.4301	PTFE+Carbon / E-Carbon/1.4301	PEEK+Carbon

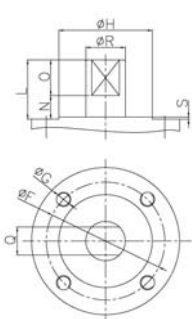
\*coating options: Electroplated Hard Chrome/ Tungsten carbide /Chrome carbide /Carbide HVOF /Nickel-based alloy

FIG.	Pressure	Material	RANGE
133.753	PN16	1.0619N	DN200-DN300
135.753	PN40	1.0619N	DN200-DN300
153.753	PN16	1.4408	DN200-DN300
155.753	PN40	1.4408	DN200-DN300
543.753	PN16	Hastelloy B3	DN200-DN300
545.753	PN40	Hastelloy B3	DN200-DN300

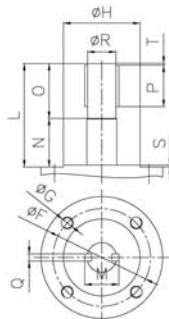


**Dimension list**

PN	DN	dL	L	L1	H	D	b	k	n-d2	D4×f	Weight
16	200	200	400	200	315	340	24	295	12-Φ22	Φ268×3	
	250	250	450	225	316	405	26	355	12-Φ26	Φ320×2	
	300	300	500	240	383	460	28	410	12-Φ26	Φ378×2	
40	200	200	400	200	315	375	34	320	12-Φ30	Φ285×3	
	250	250	450	225	316	450	38	385	12-Φ33	Φ345×3	
	300	300	500	240	383	515	42	450	16-Φ33	Φ410×4	



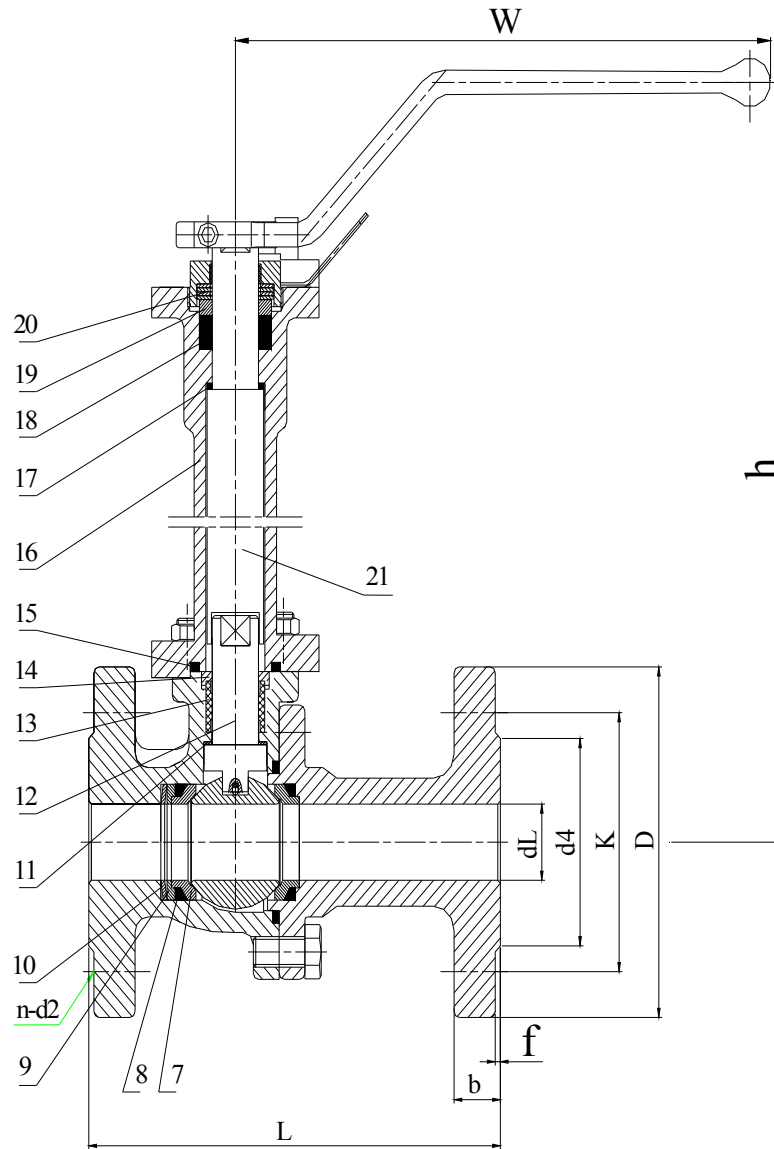
DN150/200



DN250/300

**Dimension list**

DN	ΦF	ΦG	ΦH	L	O	N	Q	ΦR	S	M	P	T
200	125	M12	85	39	39.8	21.2	27	50	3	-	-	-
250	165	M20	130	172	90	82	12	50	3	58	70	3
300	254	M16	200	172	90	82	14	55	5	69	70	3



Long stem ball valve with full bore and Flange .  
 Flange end: DIN EN 1092-1 Form B ;  
 Face to face: EN558-1 .

**Material list**

NO.	Part	Material		
		FIG. 153.753 / 155.753	FIG. 133.753 / 135.753	FIG. 543.753 / 545.753
7	Seat	1.4404/1.4571 + Coating *	1.4301+ Coating *	Hastelloy B3+DLC
8	Sealing ring	Graphite	Graphite	Graphite
9	Seat retainer	1.4401	1.4301	Hastelloy B3
10	Spring washer	17-7PH	17-7PH	Inconel X-750
11	Stem sealing	Graphite/PTFE+Graphite / E-Carbon	Graphite/PTFE+Graphite / E-Carbon	Hastelloy B3+DLC
12	Stem	17-4PH /1.4462/1.4980	17-4PH /1.4462/1.4980	Hastelloy B3
13	Sleeve	PTFE+Carbon	PTFE+Carbon	PEEK+Carbon
14	Gland	1.4401	1.4301	Hastelloy B3
15	Gasket	Graphite	Graphite	Graphite
16	Housing	1.4408	1.0619N	Hastelloy B3
17	Stem sealing	Graphite	Graphite	Hastelloy B3+DLC
18	Packing	Graphite	Graphite	Graphite
19	Metal-ring	1.4401	1.4401	1.4401
20	Spring washer	17-7PH	17-7PH	Inconel X-750
21	Long stem	1.4462/1.4401	1.4462/1.4401	Hastelloy B3

\*coating options: Electroplated Hard Chrome/ Tungsten carbide /Chrome carbide /Carbide HVOF /Nickel-based alloy

## Dimension list

PN	DN	dL	L	h	W	D	b	K	n-d2	d4×f	Weight	ISO5211
16(40)	15	Φ15	115/130	315	200	Φ95	16	Φ65	4-Φ14	Φ45×2	3.5	F05
	20	Φ20	120/150	321	200	Φ105	18	Φ75	4-Φ14	Φ58×2	4.4	F05
	25	Φ25	125/160	327	220	Φ115	18	Φ85	4-Φ14	Φ68×2	5.3	F05
	32	Φ31	130/180	342	220	Φ140	18	Φ100	4-Φ18	Φ78×2	7.2	F05
	40	Φ40	140/200	400	270	Φ150	18	Φ110	4-Φ18	Φ88×3	9.3	F07
	50	Φ50	150/230	407	270	Φ165	20	Φ125	4-Φ18	Φ102×3	13	F07
16	65	Φ65	170/290	441	360	Φ185	18	Φ145	4-Φ18	Φ122×3	16.5	F07
	80	Φ77	180/310	500	360	Φ200	20	Φ160	8-Φ18	Φ138×3	22.5	F10
	100	Φ100	190/350	518	360	Φ220	20	Φ180	8-Φ18	Φ158×3	30.5	F10
	125	Φ125	325	541	500	Φ250	22	Φ210	8-Φ18	Φ188×3	55	F12
	150	Φ150	350	606	650	Φ285	22	Φ240	8-Φ22	Φ212×3	82	F12
	200	Φ200	400	665	760	Φ340	24	Φ295	12-Φ22	Φ268×3	190	F12
	250	Φ250	450	665	/	Φ405	26	Φ355	12-Φ26	Φ320×3	480	F16
	300	Φ300	500	753	/	Φ460	28	Φ410	16-Φ26	Φ378×4	735	F16
40	65	Φ65	170/290	441	360	Φ185	22	Φ145	8-Φ18	Φ122×3	18.7	F07
	80	Φ77	180/310	500	360	Φ200	24	Φ160	8-Φ18	Φ138×3	23.6	F10
	100	Φ100	190/350	518	360	Φ235	24	Φ190	8-Φ22	Φ162×3	34	F10
	125	Φ125	325	541	500	Φ270	26	Φ220	8-Φ26	Φ188×3	60.5	F12
	150	Φ150	350	606	650	Φ300	28	Φ250	8-Φ26	Φ218×3	89	F12
	200	Φ200	400	665	760	Φ375	34	Φ320	12-Φ30	Φ285×3	201	F12
	250	Φ250	450	665	/	Φ450	38	Φ385	12-Φ33	Φ345×3	490	F16
	300	Φ300	500	753	/	Φ515	42	Φ450	16-Φ33	Φ410×4	750	F16

## Connecting format

Flanged		
Pressure rating	Flange dimension	Sealing form
PN16 PN40	DIN EN 1092-1	DIN EN 1092-1 Form B 1 <sup>1</sup> Ra max : 12.5 μm Rz max : 50 μm

### Installation instructions

Installation site is not prescribed.  
Regardless of the flow direction.

Details please consult.

## Technical parameters

### Flow characteristics - Kv ( m<sup>3</sup>/h )

DN	15	20	25	32	40	50	65	80	100	150	200	250	300
Kv	12	23	60	72	175	360	620	930	1900	3500	9170	14895	21980

### Open torque - Nm

ΔP (bar)	DN												
	15	20	25	32	40	50	65	80	100	150	200	250	300
10	20	25	25	42	50	60	85	100	221	604	469	666	1217
16	20	25	35	42	55	70	95	135	295	850	605	870	1600
25	21	26	37	45	63	103	170	238	455	1378	974	1366	2254
40	22	29	41	51	75	128	227	326	642	2004	1337	1913	3211

The values in the table are measured data and do not include safety factors.

### Maximum - Nm

Stem Material	DN	15	20	25	32	40	50	65	80	100	150	200	250	300
1.4462	M <sub>d max</sub>	50	50	336	336	600	600	600	1000	1000	3500	4000	5965	11550

### Allowable pressure in dependence of the temperature

PN	-60°C	-10°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	400°C
40	30.5	40	40	38.5	36.5	34.5	31.5	28.5	26.5	24.5
25	19	25	25	24	22.5	21.5	19.5	17.5	16.5	15
16	12	16	16	15	14.5	13.5	12.5	11	10.5	9.5

Material:1.0619

PN	-60°C	-10°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	400°C
40	40	40	40	39	35	31	28.5	26.5	25	24
25	25	25	25	24.5	22	19	18	16.5	15.5	15
16	16	16	16	15.5	14	12	11.5	10.5	10	9.5

Material:1.4408

Details please consult.