

**Bellows seal globe valve Flange**

**PN16 PN40 DN15-DN400**

**Body : 1.0619N /1.4408**

**Maintenance-free**

**Design acc. : AD 2000 A4,ATEX 2014/34/EU,EN 13709**

**Face to face : EN558-1 G1**

**Flange end : EN1092-1**

**Test acc. : EN12266-1**

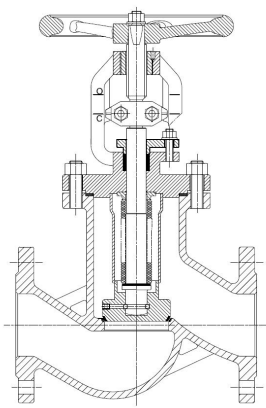
**Temperature range :**

**-29°C~ +450°C(1.0619N )**

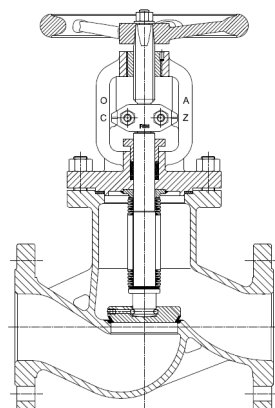
**-196°C~ +400°C(1.4408 )**

**Witzenmann Bellows**

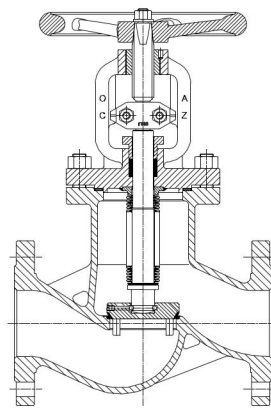
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**Fig.112i**



**Fig.112c**



**Fig.112c-g**



**Key features**

Bellows seal globe valves designed for various applications with inflammable, explosive, volatile, toxic or aggressive characteristics to provide the highest fugitive emission protection.

Full safety sealing system with multiple-walled bellows, gland packing, metal back seat, and position indicator.

Two-part rising stem design separates the upper and lower stem from each other which prevents bellows from torsion.

**Typical applications**

Bellows seal globe valves provide the highest fugitive emission protection for use in chemical processing, including Phosgene and Fertilizer applications.

For various media with inflammable, explosive, volatile, toxic or aggressive characteristics, whose emission into the atmosphere must be prevented.

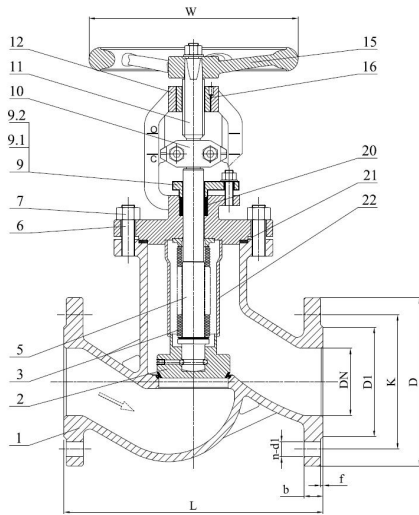


FIG.	Pressure	Material	Range
133.112i	PN16	1.0619N	DN15-DN125
135.112i	PN40	1.0619N	DN15-DN125
153.112i	PN16	1.4408	DN15-DN125
155.112i	PN40	1.4408	DN15-DN125
533.112i	PN16	2.4610	DN15-DN125
535.112i	PN40	2.4610	DN15-DN125

Design acc. :AD 2000 A4,  
ATEX 2014/34/EU,  
EN 13709  
Face to face : EN558-1 Ser.1  
Flange end : EN1092-1  
Test acc. : EN12266-1  
Temperature range :  
-29°C~ +450°C(1.0619N )  
-196°C~ +400°C(1.4408 )

**Material List**

NO.	Part	Material		
		FIG.153.112i / 155.112i	FIG.133.112i / 135.112i	Fig.533.112i/535.112i
1	Body	1.4408/1.4409	1.0619N	2.4610
1.1	Body seal	1.4408/stellit 21	1.4370/1.4551/1.4009	2.4610
2	Disk	1.4401	1.4021 QT	2.4610
2.1	Disk seal	Stellit 21/stellit 6	1.4021 QT	2.4610
3	Bellows	1.4571/2.4819	1.4571	2.4610
5	Low stem	1.4404	1.4021	2.4610
6	Bolts	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
7	Nuts	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
9	Packing gland	1.4408	1.0619N	1.4408
9.1	Gland bolt	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
9.2	Gland nut	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
10	Connecting block	1.4308	1.4308	1.4308
11	Up stem	1.4404	1.4021	1.4404
12	Bonnet	1.4408/1.4409	1.0619N	2.4610
15	Handwheel	GGG40.3	GGG40.3	GGG 40.3
16	Stem nut	Copper alloy	Copper alloy	Copper alloy
20	Packing	Graphite	Graphite	Graphite
21	Body seal	Graphite +1.4401	Graphite +1.4301	Graphite +2.4610
22	Protecting cover	1.4401	1.4021	2.4610

**Dimension List**

PN	DN	L	D	D1	K	b	f	w	n	d1	H	Hub	Kv(m³/h)	W.T.(kg)
16	65	290	185	122	145	18	3	220	8	18	313	15	72.0	23
	80	310	200	138	160	20	3	250	8	18	370	25	111.2	32.5
	100	350	220	158	180	20	3	250	8	18	390	25	170	42
	125	400	250	188	210	22	3	350	8	18	435	34	262	62.5
16/40	15	130	95	45	65	16	2	120	4	14	228	6	4.0	5.4
	20	150	105	58	75	18	2	120	4	14	233	6	6.9	6.1
	25	160	115	68	85	18	2	140	4	14	238	8	10.8	7.8
	32	180	140	78	100	18	2	140	4	18	250	8	16.5	10.0
	40	200	150	88	110	18	3	160	4	18	285	15	28.0	13.0
	50	230	165	102	125	20	3	160	4	18	293	15	43.0	16.5
40	65	290	185	122	145	22	3	220	8	18	313	15	72.0	28.0
	80	310	200	138	160	24	3	250	8	18	370	25	111.2	32.0
	100	350	235	162	190	24	3	250	8	22	390	25	170	56.3
	125	400	270	188	220	26	3	350	8	26	435	34	262	75.0

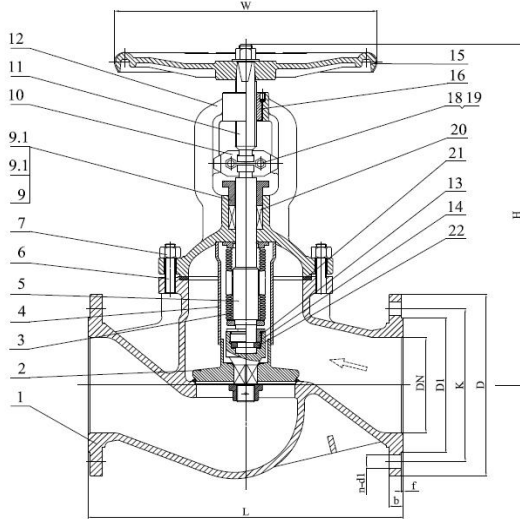


FIG.	Pressure	Material	Range
133.112i	PN16	1.0619N	DN150-DN400
135.112i	PN40	1.0619N	DN150-DN400
153.112i	PN16	1.4408	DN150-DN400
155.112i	PN40	1.4408	DN150-DN400
533.112i	PN16	2.4610	DN150-DN400
535.112i	PN40	2.4610	DN150-DN400

Design acc. : AD 2000 A4,  
 ATEX 2014/34/EU,EN 13709  
 Face to face : EN558-1 Ser.1  
 Flange end : EN1092-1  
 Test acc. : EN12266-1  
 Temperature range :  
 -29°C~ +450°C(1.0619N )  
 -196°C~ +400°C(1.4408 )

**Material List**

NO.	Part	Material		
		FIG.153.112i / 155.112i	FIG.133.112i / 135.112i	FIG.533.112i / 535.112i
1	Body	1.4408/1.4409	1.0619N	2.4610
1.1	Body seal	1.4408/stellit 21	1.4370/1.4551/1.4009	2.4610
2	Disk	1.4401	1.0460	2.4610
2.1	Disk seal	Stellit 21/stellit 6	Stellit 6	2.4610
3	Bellows	1.4571/2.4819	1.4571	2.4610
4	Protecting cover	1.4401	1.4021	2.4610
5	Low stem	1.4404	1.4021	2.4610
6	Bolts	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
7	Nuts	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
9	Packing gland	1.4408	1.0619N	1.4408
9.1	Gland bolt	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
9.2	Gland nut	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
10	Connecting block	1.4308	1.4308	1.4308
11	Up stem	1.4404	1.4021	1.4404
12	Bonnet	1.4408/1.4409	1.0619N	2.4610
13	Disc screw	1.4401	1.4006	2.4610
14	Secondary disc/Secondary seat	1.4401 stellited 21/1.4401	1.4021 QT/1.4009	2.4610
15	Handwheel	GGG40.3	GGG40.3	GGG 40.3
16	Stem nut	Copper alloy	Copper alloy	Copper alloy
18	Nut	A2	35	A2
19	Bolts	A2-70	35	A2-70
20	Packing	Graphite	Graphite	Graphite
21	Body seal	Graphite +1.4401	Graphite +1.4301	Graphite+2.4610
22	Folio ring	1.4401	1.4006	2.4610

**Dimension List**

PN	DN	L	D	D1	K	b	f	w	n	d1	H	Hub	Kv(m³/h)	W.T.(kg)
16	150	480	285	212	240	22	3	400	8	22	470	40	372	89.5
	200	600	340	268	295	24	3	460	12	22	560	51	680	193.5
	250	730	405	320	355	26	3	600	12	26	1116	65	1013	245
	300	850	460	378	410	28	4	800	12	26	1176	80	1446	410
	350	980	520	438	470	30	4	-	16	26	-	-	-	-
	400	1100	580	490	525	32	4	-	16	30	-	-	-	-
40	150	480	300	218	250	28	3	400	8	26	470	40	372	106.0
	200	600	375	285	320	34	3	460	12	30	560	51	680	232.0
	250	730	450	345	385	38	3	600	12	33	1116	65	1013	294
	300	850	515	410	450	42	4	800	16	33	1176	80	1446	580

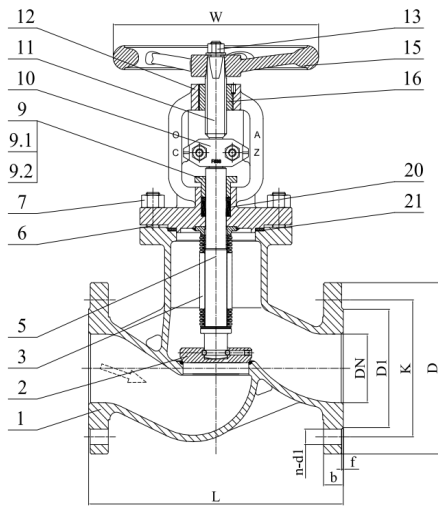


FIG.	Pressur	Material	Range
133.112c	PN16	1.0619N	DN15-DN125
135.112c	PN40	1.0619N	DN15-DN125
153.112c	PN16	1.4408	DN15-DN125
155.112c	PN40	1.4408	DN15-DN125
533.112c	PN16	2.4610	DN15-DN125
535.112c	PN40	2.4610	DN15-DN125

Design acc. : AD 2000 A4,  
ATEX 2014/34/EU,  
EN 13709  
Face to face : EN558-1 Ser.1  
Flange end : EN1092-1  
Test acc. : EN12266-1  
Temperature range :  
-29°C~ +450°C(1.0619N )  
-196°C~ +400°C(1.4408 )

**Material List**

NO.	Part	Material		
		FIG.153.112c / 155.112c	FIG.133.112c / 135.112c	FIG.533.112c / 535.112c
1	Body	1.4408/1.4409	1.0619N	2.4610
1.1	Body seal	1.4408/stellit 21	1.4370/1.4551/1.4009	2.4610
2	Disk	1.4401	1.4021 QT	2.4610
2.1	Disk seal	Stellit 21/stellit 6	1.4021 QT	2.4610
3	Bellows	1.4571/2.4819	1.4571	2.4610
5	Low stem	1.4404	1.4021	2.4610
6	Bolts	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
7	Nuts	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
9	Packing gland	1.4408	1.0619N	1.4408
9.1	Gland bolt	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
9.2	Gland nut	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
10	Connecting block	1.4308	1.4308	1.4308
11	Up stem	1.4404	1.4021	1.4404
12	Bonnet	1.4408/1.4409	1.0619N	2.4610
13	Nut	A2	1.1181(YK)	A2
15	Handwheel	GGG40.3	GGG40.3	GGG40.3
16	Stem nut	Copper alloy	Copper alloy	Copper alloy
20	Packing	Graphite	Graphite	Graphite
21	Body seal	Graphite +1.4401	Graphite +1.4301	Graphite +2.4610

**Dimension List**

PN	DN	L	D	D1	K	b	f	w	n	d1	H	Hub	Kv(m³/h)	W.T.(kg)
16	65	290	185	122	145	18	3	220	8	18	313	15	72.0	23
	80	310	200	138	160	20	3	250	8	18	370	25	111.2	32.5
	100	350	220	158	180	20	3	250	8	18	390	25	170	42
	125	400	250	188	210	22	3	350	8	18	435	34	262	62.5
16/40	15	130	95	45	65	16	2	120	4	14	228	6	4.0	5.4
	20	150	105	58	75	18	2	120	4	14	233	6	6.9	6.1
	25	160	115	68	85	18	2	140	4	14	238	8	10.8	7.8
	32	180	140	78	100	18	2	140	4	18	250	8	16.5	10.0
	40	200	150	88	110	18	3	160	4	18	285	15	28.0	13.0
	50	230	165	102	125	20	3	160	4	18	293	15	43.0	16.5
40	65	290	185	122	145	22	3	220	8	18	313	15	72.0	28.0
	80	310	200	138	160	24	3	250	8	18	370	25	111.2	32.0
	100	350	235	162	190	24	3	250	8	22	390	25	170	56.3
	125	400	270	188	220	26	3	350	8	26	435	34	262	75.0

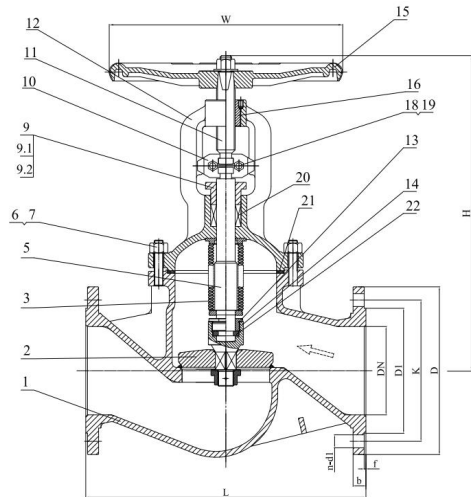


FIG.	Pressure	Material	Range
133.112c	PN16	1.0619N	DN150-DN400
135.112c	PN40	1.0619N	DN150-DN400
153.112c	PN16	1.4408	DN150-DN400
155.112c	PN40	1.4408	DN150-DN400
533.112c	PN16	2.4610	DN150-DN400
535.112c	PN40	2.4610	DN150-DN400

Design acc. :AD 2000 A4,  
 ATEX 2014/34/EU, EN 13709  
 Face to face : EN558-1 Ser.1  
 Flange end : EN1092-1  
 Test acc. : EN12266-1  
 Temperature range :  
 -29°C~ +450°C(1.0619N )  
 -196°C~ +400°C(1.4408 )

**Material List**

NO.	Part	Material		
		FIG.153.112c / 155.112c	FIG.133.112c / 135.112c	FIG.533.112c / 535.112c
1	Body	1.4408/1.4409	1.0619N	2.4610
1.1	Body seal	1.4408/stellit 21	1.4370/1.4551/1.4009	2.4610
2	Disk	1.4401	1.0460	2.4610
2.1	Disk seal	Stellit 21/stellit 6	Stellit 6	2.4610
3	Bellows	1.4571/2.4819	1.4571	2.4610
5	Low stem	1.4404	1.4021	2.4610
6	Bolts	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
7	Nuts	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
9	Packing gland	1.4408	1.0619N	1.4408
9.1	Gland bolt	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
9.2	Gland nut	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
10	Connecting block	1.4308	1.4308	1.4308
11	Up stem	1.4404	1.4021	1.4404
12	Bonnet	1.4408/1.4409	1.0619N	2.4610
13	Disc screw	1.4401	1.4006	2.4610
14	Secondary disc/Secondary seat	1.4401 stellited 21/1.4401	1.4021 QT/1.4009	2.4610
15	Handwheel	GGG40.3	GGG40.3	GGG40.3
16	Stem nut	Copper alloy	Copper alloy	Copper alloy
18	Nut	A2	35	A2
19	Bolts	A2-70	35	A2-70
20	Packing	Graphite	Graphite	Graphite
21	Body seal	Graphite +1.4401	Graphite +1.4301	Graphite +2.4610
22	Folio ring	1.4401	1.4006	2.4610

**Dimension List**

PN	DN	L	D	D1	K	b	f	w	n	d1	H	Hub	Kv(m³/h)	W.T.(kg)
16	150	480	285	212	240	22	3	400	8	22	470	40	372	89.5
	200	600	340	268	295	24	3	460	12	22	560	51	680	193.5
	250	730	405	320	355	26	3	600	12	26	1116	65	1013	245
	300	850	460	378	410	28	4	800	12	26	1176	80	1446	410
	350	980	520	438	470	30	4	-	16	26	-	-	-	-
	400	1100	580	490	525	32	4	-	16	30	-	-	-	-
40	150	480	300	218	250	28	3	400	8	26	470	40	372	106.0
	200	600	375	285	320	34	3	460	12	30	560	51	680	232.0
	250	730	450	345	385	38	3	600	12	33	1116	65	1013	294
	300	850	515	410	450	42	4	800	16	33	1176	80	1446	580

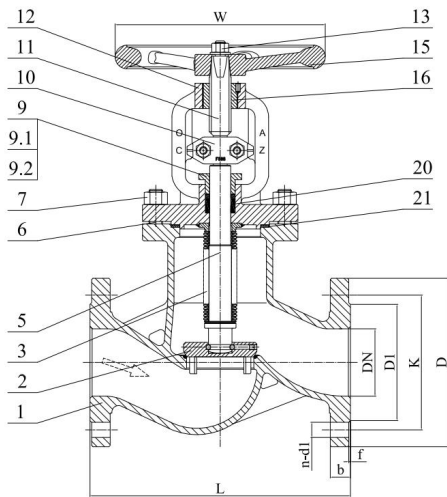


FIG.	Pressur	Material	Range
133.112c-g	PN16	1.0619N	DN15-DN125
135.112c-g	PN40	1.0619N	DN15-DN125
153.112c-g	PN16	1.4408	DN15-DN125
155.112c-g	PN40	1.4408	DN15-DN125
533.112c-g	PN16	2.4610	DN15-DN125
535.112c-g	PN40	2.4610	DN15-DN125

**Design acc. : EN 13709**  
**Face to face : EN558-1 Ser.1**  
**Flange end : EN1092-1**  
**Test acc. : EN12266-1**  
**Temperature range :**  
**-29°C ~ +450°C(1.0619N)**  
**-196°C ~ +400°C(1.4408)**

**Material List**

NO.	Part	Material		
		FIG.153.112c-g / 155.112c-g	FIG.133.112c-g / 135.112c-g	FIG.533.112c-g / 535.112c-g
1	Body	1.4408/1.4409	1.0619N	2.4610
1.1	Body seal	1.4408/stellit 21	1.4370/1.4551/1.4009	2.4610
2	Disk	1.4401	1.4021 QT	2.4610
2.1	Disk seal	Stellit 21/stellit 6	1.4021 QT	2.4610
3	Bellows	1.4571	1.4571	1.4571
5	Low stem	1.4404	1.4021	1.4021
6	Bolts	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
7	Nuts	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
9	Packing gland	1.4408	1.0619N	1.4408
9.1	Gland bolt	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
9.2	Gland nut	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
10	Connecting block	1.4308	1.4308	1.4308
11	Up stem	1.4404	1.4021	1.4404
12	Bonnet	1.4408/1.4409	1.0619N	1.4408
13	Nut	A2	1.1181(YK)	A2
15	Handwheel	GGG40.3	GGG40.3	GGG40.3
16	Stem nut	Copper alloy	Copper alloy	Copper alloy
20	Packing	Graphite	Graphite	Graphite
21	Body seal	Graphite +1.4401	Graphite +1.4301	Graphite +2.4610

**Dimension List**

PN	DN	L	D	D1	K	b	f	w	n	d1	H	Hub	Kv(m³/h)	W.T.(kg)
16	65	290	185	122	145	18	3	220	8	18	313	15	64.8	23
	80	310	200	138	160	20	3	250	8	18	370	25	100.3	32.5
	100	350	220	158	180	20	3	250	8	18	390	25	144.5	42
	125	400	250	188	210	22	3	350	8	18	435	34	222.7	62.5
16/40	15	130	95	45	65	16	2	120	4	14	228	6	3.8	5.4
	20	150	105	58	75	18	2	120	4	14	233	6	6.5	6.1
	25	160	115	68	85	18	2	140	4	14	238	8	10.3	7.8
	32	180	140	78	100	18	2	140	4	18	250	8	15.7	10.0
	40	200	150	88	110	18	3	160	4	18	285	15	26.6	13.0
	50	230	165	102	125	20	3	160	4	18	293	15	39.6	16.5
40	65	290	185	122	145	22	3	220	8	18	313	15	64.8	28.0
	80	310	200	138	160	24	3	250	8	18	370	25	100.3	32.0
	100	350	235	162	190	24	3	250	8	22	390	25	144.5	56.3
	125	400	270	188	220	26	3	350	8	26	435	34	222.7	75.0

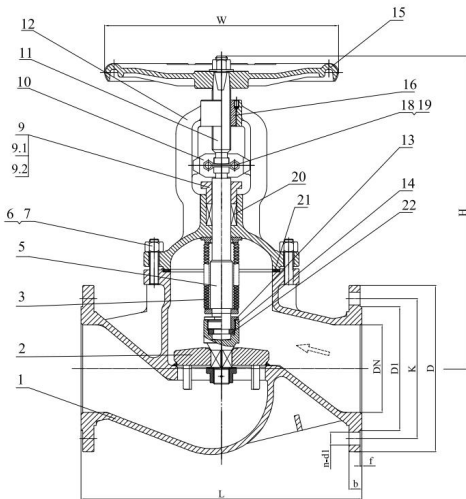


FIG.	Pressure	Material	Range
133.112c-g	PN16	1.0619N	DN150-DN400
135.112c-g	PN40	1.0619N	DN150-DN400
153.112c-g	PN16	1.4408	DN150-DN400
155.112c-g	PN40	1.4408	DN150-DN400
533.112c-g	PN16	2.4610	DN150-DN400
535.112c-g	PN40	2.4610	DN150-DN400

Design acc. :AD 2000 A4,  
 ATEX 2014/34/EU, EN 13709  
 Face to face : EN558-1 Ser.1  
 Flange end : EN1092-1  
 Test acc. : EN12266-1  
 Temperature range :  
 -29°C~ +450°C(1.0619N )  
 -196°C~ +400°C(1.4408 )

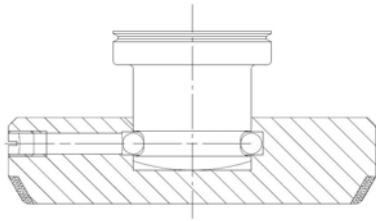
**Material List**

NO.	Part	Material		
		FIG.153.112c-g / 155.112c-g	FIG.133.112c-g / 135.112c-g	FIG.533.112c-g / 535.112c-g
1	Body	1.4408/1.4409	1.0619N	2.4610
1.1	Body seal	1.4408/stellit 21	1.4370/1.4551/1.4009	2.4610
2	Disk	1.4401	1.0460	2.4610
2.1	Disk seal	Stellit 21/stellit 6	Stellit 6	2.4610
3	Bellows	1.4571	1.4571	2.4610
5	Low stem	1.4404	1.4021	2.4610
6	Bolts	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
7	Nuts	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
9	Packing gland	1.4408	1.0619N	1.4408
9.1	Gland bolt	A4-70/A2-70	1.7225(GC)	A4-70/A2-70
9.2	Gland nut	A4-70/A2-70	1.1181(YK)	A4-70/A2-70
10	Connecting block	1.4308	1.4308	1.4308
11	Up stem	1.4404	1.4021	1.4401
12	Bonnet	1.4408/1.4409	1.0619N	1.4408
13	Disc screw	1.4401	1.4006	2.4610
14	Secondary disc/Secondary seat	1.4401 stellited 21/1.4401	1.4021 QT/1.4009	2.4610
15	Handwheel	GGG40.3	GGG40.3	GGG40.3
16	Stem nut	Copper alloy	Copper alloy	Copper alloy
18	Nut	A2	35	A2
19	Bolts	A2-70	35	A2-70
20	Packing	Graphite	Graphite	Graphite
21	Body seal	Graphite +1.4401	Graphite +1.4301	Graphite +2.4610
22	Folio ring	1.4401	1.4006	2.4610

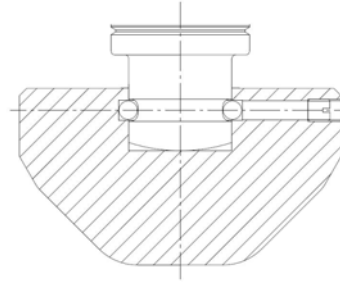
**Dimension List**

PN	DN	L	D	D1	K	b	f	w	n	d1	H	Hub	Kv(m³/h)	W.T.(kg)
16	150	480	285	212	240	22	3	400	8	22	470	40	316.2	89.5
	200	600	340	268	295	24	3	460	12	22	560	51	578	193.5
	250	730	405	320	355	26	3	600	12	26	1116	65	861	245
	300	850	460	378	410	28	4	800	12	26	1176	80	1229.1	410
	350	980	520	438	470	30	4	-	16	26	-	-	-	-
	400	1100	580	490	525	32	4	-	16	30	-	-	-	-
40	150	480	300	218	250	28	3	400	8	26	470	40	316.2	106.0
	200	600	375	285	320	34	3	460	12	30	560	51	578	232.0
	250	730	450	345	385	38	3	600	12	33	1116	65	861	294
	300	850	515	410	450	42	4	800	16	33	1176	80	1229.1	580

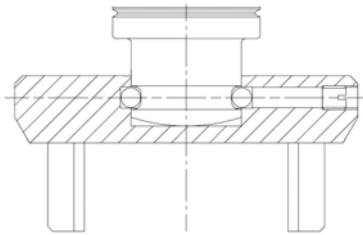
Available



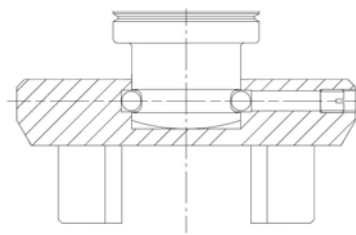
Isolation plug with marginal seat



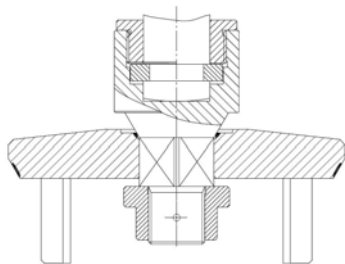
Regulating plug with marginal seat



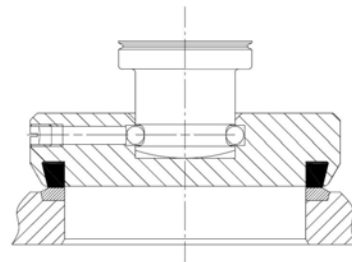
V-port plug with marginal seat



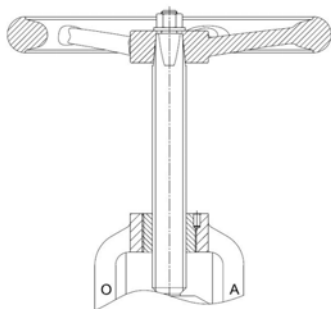
V-port regulating plug with marginal seat



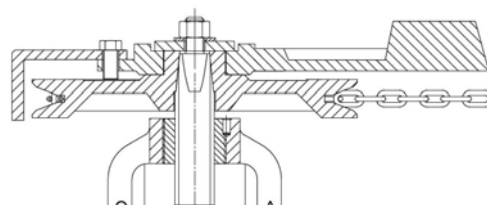
Balancing plug



Plug with soft seat  
Max. Operating temperature 200°C at PTFE



Extended stem



Chain wheel



Pressure-temperature limit rating table

Body Material	Nominal Pressure(PN)	Temperature(℃)	Pressure(barg)
1.0619N	16	-10	16
		100	14.8
		150	14
		200	13.3
		250	12.1
		300	11
		350	10.2
		400	9.5
1.0619N	40	-10	40
		100	37.1
		150	35.2
		200	33.3
		250	30.4
		300	27.6
		350	25.7
		400	23.8
1.4408	16	-10	16
		100	16
		150	14.5
		200	13.4
		250	12.7
		300	11.8
		350	11.4
		400	10.9
1.4408	40	-10	40
		100	40
		150	36.3
		200	33.7
		250	31.8
		300	29.7
		350	28.5
		400	27.4
2.4610	16	-10	16
		100	16
		150	14
		200	12
		250	9.6
		300	8.2
		350	6.7
		400	5.2
2.4610	40	-10	40
		100	40
		150	34
		200	30
		250	28
		300	26
		350	25
		400	22