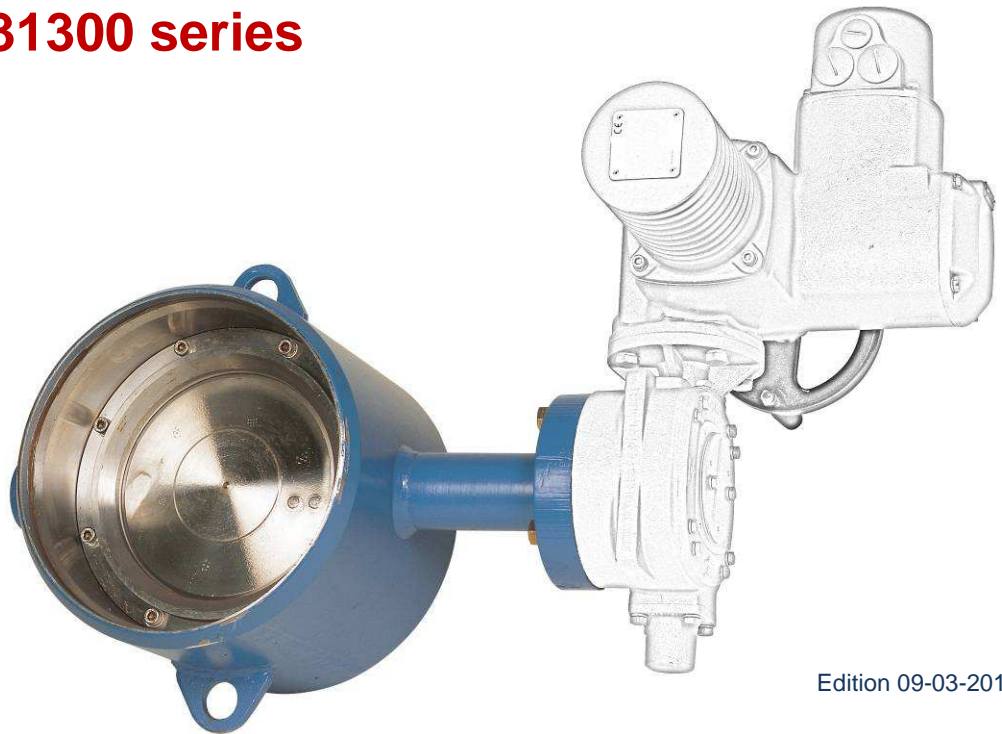


BUTTERFLY VALVE of carbon steel with welded ends **31300 series**




Edition 09-03-2011

Description

The welded butterfly valve 31300 is specially designed for district heating and district cooling. It can be used as an on-off or control valve. Högfors butterfly valve is tight in both flow directions.

The body of the butterfly valve with weld ends is carbon steel. The eccentric disc and shafts are made of stainless steel. Replaceable seat ring is hard chrome plated stainless steel. The shaft packing box is a combination of graphite rings and O-rings which are possible to tighten while in pipeline and are also replaceable.

Nominal dimensions:	DN 200 - 1400
Nominal pressure	PN 25bar
Disk seal	Stainless steel (CS)
Closing pressure (ΔP)	ΔP 16bar or 25bar
* Tightness class ISO 5208, EN 12266-1	RATE B
** Working temperature of liquid media (version for steam also available)	DN 200 – 1000 max +260°C/ min -40°C DN1200 – 1400 max + 260°C/ min -20°C
Face-to-face length according to EN 558-1	series 14
Connection	Weld end: The pipe according to standard DIN or GOST
Safety	Conform to the requirements of the Council Directive 97/23/EC on Pressure Equipment, marking: Class: gas, group 1. 

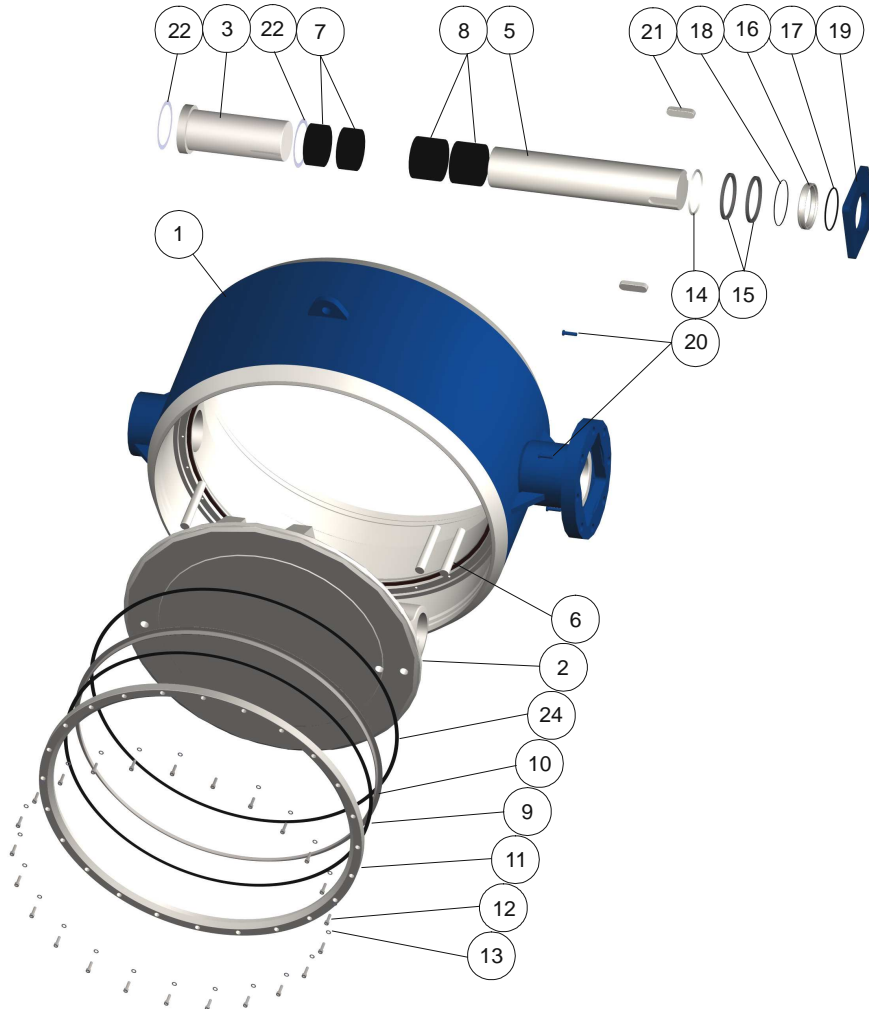
*) Option with Rate A is available on request.

**) Wider temperature range is available.

Consult factory for details.



Exploded view

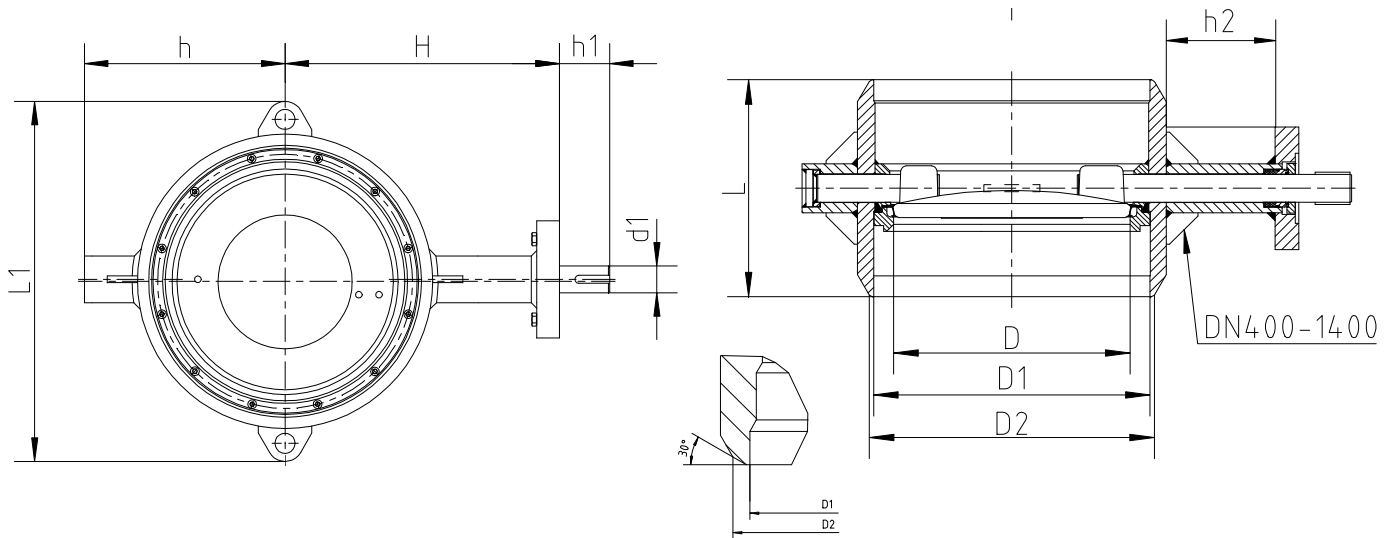


Parts list and standard materials

Part	Material
1	Body Carbon steel EN 10028-2 P265GH
2	Disk Stainless steel EN10213-4 1.4408, ASTM A351 CF8M
3	Subshaft Stainless steel EN 10088-3 1.4460 / 1.4418
5	Main shaft Stainless steel EN 10088-3 1.4460 / 1.4418
6	Conical pin Stainless steel EN10088-3 1.4462
7	Subshaft bearing PTFE on stainless steel net
8	Stem bearing PTFE on stainless steel net
9,24	Shim Carbon Fiber SFS5811 Graphite for steam version
10	Seat ring Stainless steel AISI 316, AISI 904L hard chrome plated
11	Retaining ring Carbon steel P265GH
12, 13	Socket screw and washer Stainless steel ISO 3506 A4-80
14	Back-up-ring Stainless steel 1.4404
15	Box packing Graphite
16	Shaft seal bushing Stainless steel 1.4404
17,18	O-ring EPDM Absent in version for steam
19	Gland Stainless steel 1.4436 / 1.4404
20	Hexagonal screw Stainless steel ISO 3506 A4-80
21	Key Carbon steel
22	Bearing plate PTFE on stainless steel net



Dimensions



DN	L	D	DIN end		GOST end		h	H	h1	d1	h2	L1	Flange ISO5211	Weight, kg
			D1	D2	D1	D2								
200	230	138	210.1	219.1	210.1	219.1	154	259	58	25	115	233	F10	32
250	250	187	263.0	273.0	263.0	273.0	193	298	63	30	125	385	F12	47
300	270	238	312.7	323.9	312.7	323.9	229	323	69	35	125	435	F12	64
350	290	286	344.4	355.6	365.0	377.0	255	352	75	40	125	465	F14	95
400	310	337	393.8	406.4	414.0	426.0	300	409	75	40	155	540	F14	124
450	330	386	444.4	457.0	-	-	326	445	86	50	163	590	F16	164
500	350	437	495.4	508.0	514.0	530.0	351	470	86	50	163	660	F16	201
600	390	483	593.6	609.6	616.0	630.0	376	548	103	60	186	760	F16	315
700	430	582	693.6	711.2	704.0	720.0	440	601	119	70	186	860	F25	437
800	470	682	795.2	812.8	804.0	820.0	490	651	119	70	187	955	F30	527
900	510	775	894.4	914.4	902.0	920.0	575	718	125	90	200	1070	F30	799
1000	550	855	994.0	1016	1000	1020	636	764	130	100	183	1200	F30	1105
1200	630	1054	1195	1220	1195	1220	755	873	160	140	182	1440	F35	2033
1400	710	1237	1392	1420	1392	1420	912	1018	180	170	206	1770	F40	3215

Operation

Högfors valves can be equipped with an actuator to your specification.

- bare shaft (not recommended),
- manual gear,
- electric actuator,
- pneumatic or hydraulic actuator.

Operation torque.

DN	200	250	300	350	400	450	500	600	700	800	900	1000	1200	1400
Torque*, Nm	240	400	700	1'100	1'600	2'200	3'000	4'200	6'800	10'000	13'000	16'000	24'000	34'000

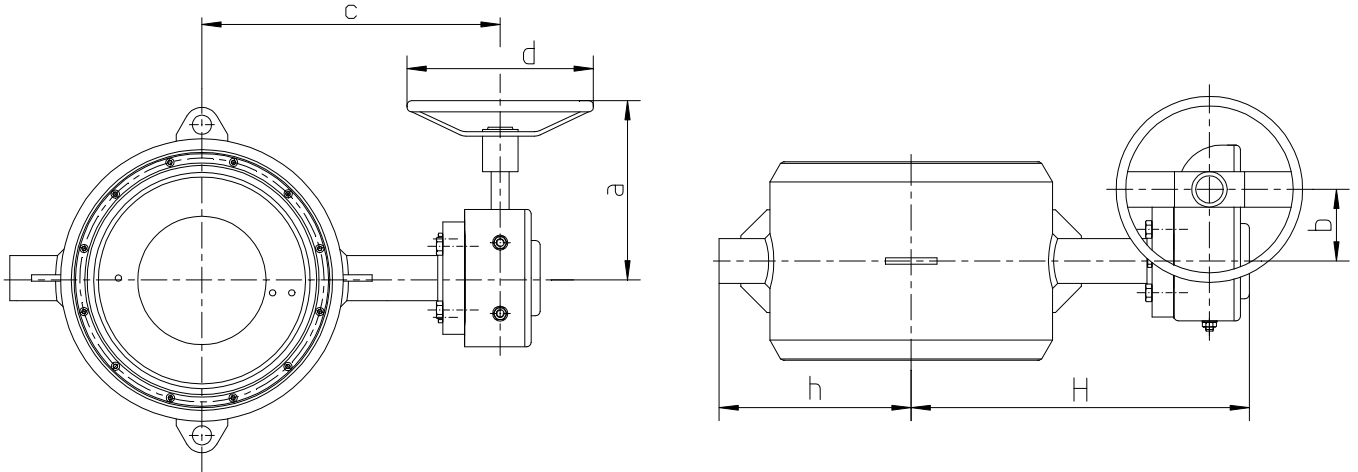
*) for steam duty use the next size up.



Manual gear.

Opening and closing of the valves from the handwheel.

The position of disc can be seen on a position indicator on top of the gear.



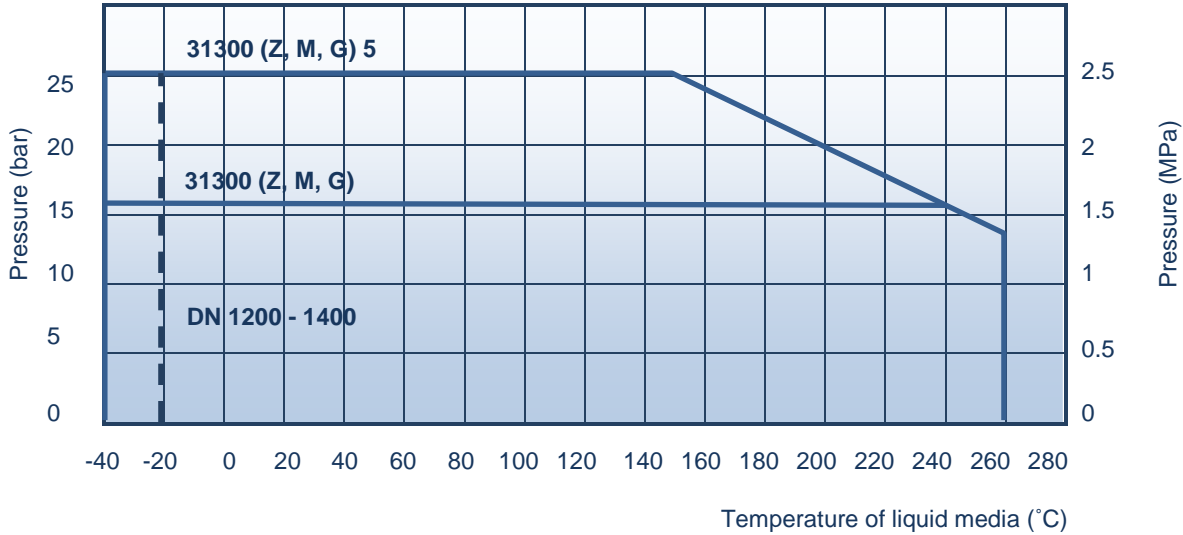
DN	Manual gear Pro-Gear								Manual gear Rotork							
	Type	H	h	a	b	c	d	Weight*, kg	Type	H	h	a	b	c	d	Weight*, kg
200	Q-800	349	154	202	67	301	200	40	AB550N	346	154	220	71	300	200	41
250	Q-800	379	193	247	67	340	300	55	AB550N	385	193	255	71	339	300	56
300	Q-800	417	229	264	90	373	300	72	AB550N	410	229	255	71	363	300	73
350	Q-2000	446	255	264	90	402	500	111	AB880N	442	255	291	86	394	400	109
400	Q-2000	503	300	264	90	459	500	140	AB880N	499	300	291	86	451	400	138
450	Q-2000	573	326	405	138	500	500	180	AB1950N	566	326	387	130	500	500	196
500	Q-4000	576	351	362	123	520	500	233	AB1950N	591	351	387	130	525	500	233
600	Q-4000	675	376	387	154	598	500	347	AB1950N	669	376	387	130	603	500	347
700	Q-12000	761	440	505	181	687	500	494	AB6800N/SP4	760	440	500	263	660	500	482
800	Q-12000	811	490	505	181	737	500	584	AB6800N/SP4	810	490	500	263	710	500	572
900	Q-16000	887	575	592	237	792	500	865	250/SP9	896	575	615	431	803	500	1024
1000									250/SP9	942	636	615	431	849	500	1330
1200									250/SP9	1051	755	615	431	958	600	2258
1400									500/SP15	1218	912	755	450	1108	700	3615

* weight of hand wheel is not included



Pressure / Temperature Rating.

The max pressure difference depends on the working temperature



Product codes

		Maximum Closing pressure (ΔP)			
		16bar		25 bar	
	Weld end standard	DIN	GOST	DIN	GOST
bare shaft	DN 200 – 300, 1200 - 1400	31300CS__Z	31300CS__Z	31300CS__Z5	31300CS__Z5
	DN 350 – 1000	31300CS__Z	31300CS__ZG	31300CS__Z5	31300CS__ZG5
manual gear	DN 200 – 300, 1200 - 1400	31300CS__M	31300CS__M	31300CS__M5	31300CS__M5
	DN 350 – 1000	31300CS__M	31300CS__MG	31300CS__M5	31300CS__MG5
For steam on special order. Code number: 31301CS__					

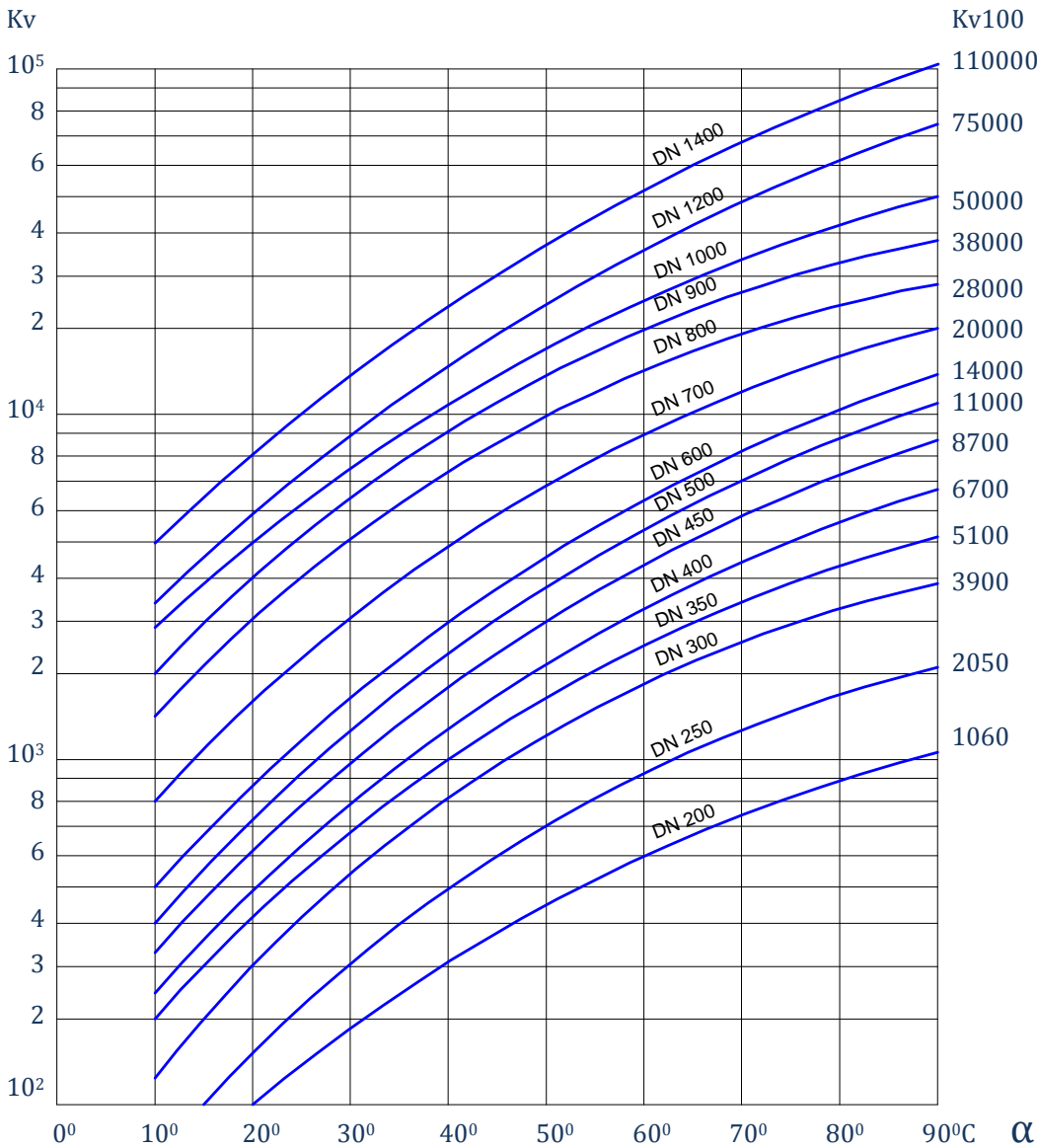
How to order

		3	1	3	00	CS	800	M	G5
Body material:	3 – Carbon steel								
Valve type:	1 - butterfly valve,								
Connection:	0, 1, 2 – wafer type, 3 - welded end, 5 – flanged,								
Design options:	00 – Standard, 01 - For steam								
Main seal	(CS) - Stainless steel								
Size DN									
Operation:	(Z) - bare shaft, (M) - manual gear								
Options	(G) – GOST weld end, (5) – $\Delta P = 25$ bar								



Flow curves

Indicating typical Kv values.



WATER:

Volume flow: $Q = K_V \sqrt{\frac{\Delta p}{\rho}}$

Flow velocity: $V = 354 \frac{Q}{DN^2}$

K_V = KV value - Capacity factor

DN = nominal valve size (mm)

α = disk opening angle

Δp = pressure difference, bar

ρ - density of liquid, kg/dm³

V - flow velocity, m/s

Q - volume flow, m³ / h