

411

Butterfly valve of stainless steel DN 80 - 600

04.07.2006

Operation

Butterfly valve 411 is an on-off and control valve for demanding industrial pipelines. The valve is tight to both directions of flow.

Nominal pressure	PN 25
Closing pressure difference CS	20 bar DN 80 - 350 16 bar DN 400 - 600
Closing pressure difference TS	25 bar DN 80 - 350 16 bar DN 400 - 600

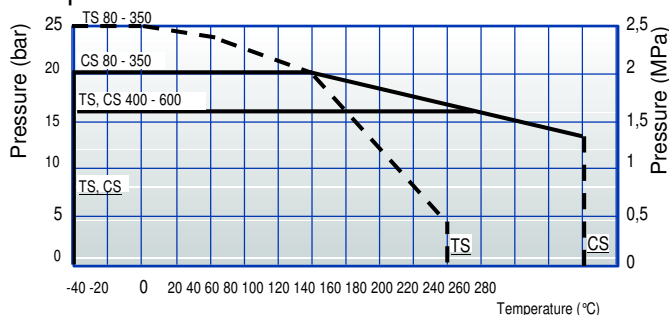
Disc seal alternatives AISI 316, PTFE+C

Temperature and tightness class

AISI 316	max +260 °C/ min -40 °C ISO5208, EN 12266-1 RATE B
PTFE+C	max +180 °C/ min -40 °C ISO5208, EN 12266-1 RATE A



The max pressure difference depends on the working temperature



Construction

The body of this wafer type butterfly valve is made of stainless steel. The double eccentric disc and stem are of stainless steel as well. Stem seals are tightable graphite seals and O-rings.

Conform with the requirements of the Council Directive 97/23/EC on Pressure Equipment, marking:

Class: Gas, group 1

 0409

Face-to-face length according to ISO 5752, EN 558-1 series 20 DIN 3202 K1

Nominal dimensions: DN 80 - 600

Product codes:

411CS ___ metal seated
41102TS ___ teflon seated

Connection: Between flanges SFS 2123 = DIN 2501 PN 25, PN 16, PN 10 ANSI CLASS150

411 ___ with handlever
411 ___ Z with bare shaft
411 ___ M with manual gear

For steam on special order:

Code number: 41101CS FIRE SAFE accepted

Materials

Body:	Stainless steel ASTM A351 CF8M
Flange:	Stainless steel ASTM A351 CF8M, EN 10028-7 1.4436
Disc:	Stainless steel EN 10213-4 1.4408, ASTM A351 CF8M
Shaft:	Stainless steel EN 10088-3 1.4460
Disc seal:	Stainless steel AISI 316/ PTFE+C
Shaft seal:	Graphite/ EPDM or Graphite/ FPM

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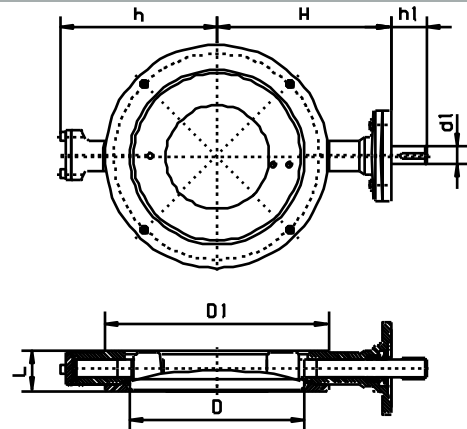
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Dimensions

DN	L	D1	D	h	H	h1	d1	Laippa ISO5211	Paino kg
80	46	138	72	114	144	45	15	F07	6,5
100	52	158	89	131	168	52	20	F07	8,0
125	56	188	113	143	179	52	20	F07	9,8
150	56	212	137	160	199	58	25	F10	14,9
200	60	268	187	200	224	58	25	F12	29*)
250	68	320	238	232	269	63	30	F12	38*)
300	78	370	286	275	308	69	35	F14	54*)
350	78	430	337	303	335	69	35	F14	67*)
400	102	482	386	333	380	86	50	F16	118*)
500	127	585	483	388	458	103	60	F16	198*)
600	154	685	582	448	530	119	70	F25	337*)

*) with manual gear



Operation

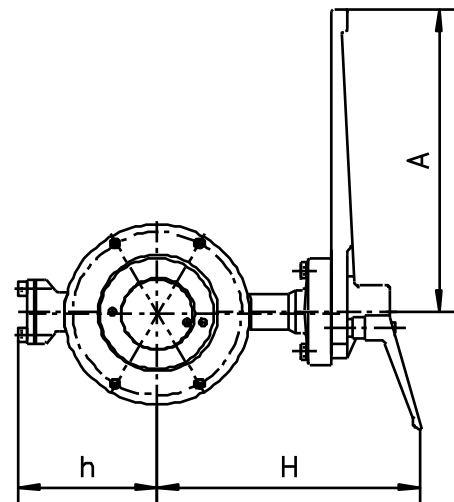
The butterfly valve is delivered with handlever, manual gear, electric, pneumatic or hydraulic actuator according to customer's needs.

Handlever

The smaller sizes, DN 80 -150 can be operated with handlever. The opening and closing of valves is stepless.

The valve is open when the handlever is parallel to the pipe.

DN	h	H	A
80	114	223	300
100	131	246	300
125	143	260	300
150	160	289	420

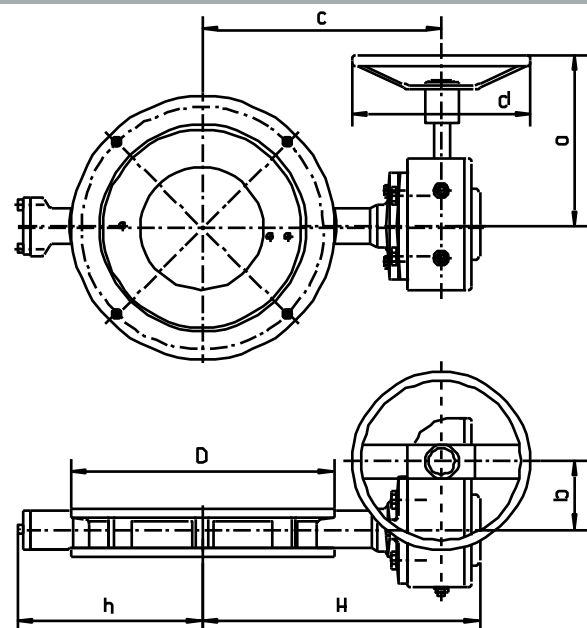


Manual gear

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	L	D	h	H	a	b	c	d
80	46	138	114	204	218	45	171	200
100	52	158	131	228	218	45	195	200
125	56	188	143	239	218	45	206	200
150	56	212	160	286	220	71	240	200
200	60	268	200	311	220	71	265	200
250	68	320	232	356	255	71	310	300
300	78	370	275	398	291	86	350	400
350	78	430	303	425	291	86	377	400
400	102	482	333	501	387	130	435	500
500	127	585	388	579	387	130	513	500
600	154	685	448	689	500	263	589	500



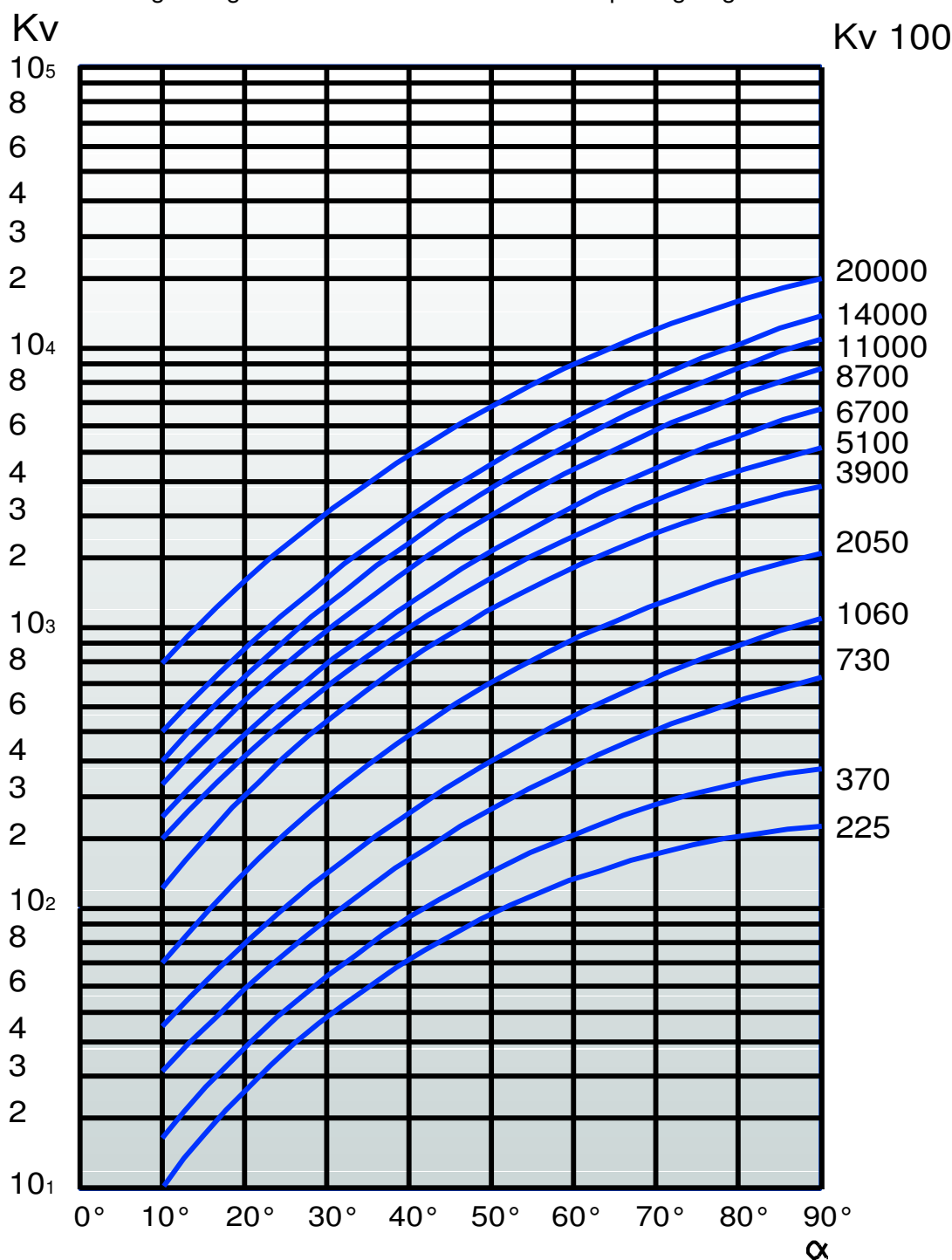
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The control curves

The curves indicate the regulating values of the valve at different opening angles.



WATER:

Volume flow:

$$Q = K_v \sqrt{\frac{\Delta p}{\rho}}$$

Flow velocity:

$$v = 354 \frac{Q}{DN^2}$$

K_v
DN
 α
Q
 Δp
 ρ
v

= kv-value — Capacity factors
= nominal valve size (mm)
= disc opening angle
= volume flow m^3/h
= pressure difference bar
= density of liquid kg/dm^3
= flow velocity m/s