

31000

Butterfly valve of carbon steel DN 80 - 350

06.02.2007

Operation

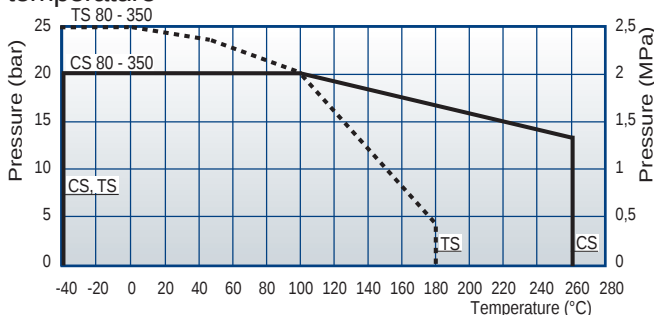
Butterfly valve 31000 is used in industrial pipelines for demanding on-off and regulating tasks as well as in district heating. It is tight to both directions of flow.

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

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

This wafer type butterfly valve is installed between flanges. The body material is cast carbon steel. Double eccentric disc and shaft are 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.

Face-to-face length according to ISO 5752, EN 558-1 series 25 DIN 3202 K2

Connection: Between flanges DIN2501 PN25, PN16, PN10, ANSI CLASS 150

Conform with the requirements of the Council Directive 97/23/EC on Pressure Equipment, marking:
Class: Gas, group 1

 0575

Nominal dimensions: DN 80 - 350
Product codes:

31000CS metal seated
31002TS teflon seated

310... with handle lever up to DN150
310... Z with bare shaft
310... M with manual gear

For steam on special order. Code number: 31001CS
max 8 bar/ 170°C

Materials

Body: Cast carbon steel GP240GH/ WCB
Disc: Stainless steel EN10213-4 1.4408, ASTM A351 CF8M
Shaft: Stainless steel EN10088-3 1.4460
Disc seal: Stainless steel AISI 316/ PTFE+C
Shaft seal: Graphite/ FPM O-Ring

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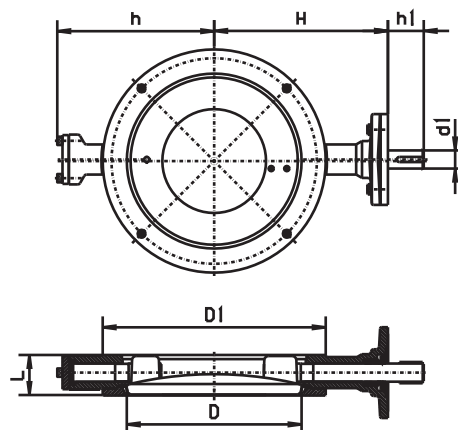
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Dimensions

DN	L	D1	D	h	H	h1	d1	Flange ISO5211	Weight kg
80	49	138	72	114	144	45	15	F07	6,5
100	56	158	89	131	168	52	20	F07	7,0
125	64	188	113	143	179	52	20	F07	8,7
150	70	212	137	160	199	58	25	F10	13
200	71	268	187	200	224	58	25	F12	29*)
250	76	320	238	232	269	63	30	F12	38*)
300	83	370	286	275	308	69	35	F14	54*)
350	92	430	337	303	335	69	35	F14	67*)

*) with manual gear



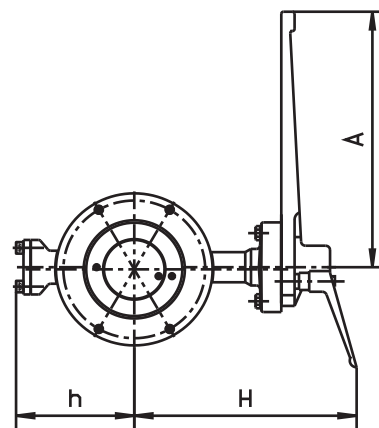
Operation

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.

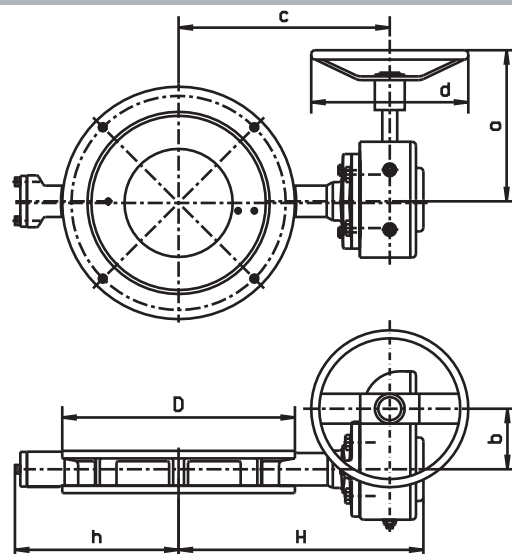
DN	h	H	A
80	114	223	300
100	131	246	300
125	143	260	300
150	160	289	420



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	D	h	H	a	b	c	d
80	138	114	204	218	45	171	200
100	158	131	228	218	45	195	200
125	188	143	239	218	45	206	200
150	212	160	286	220	71	240	200
200	268	200	311	220	71	265	200
250	320	232	356	255	71	310	300
300	370	275	398	291	86	350	400
350	430	303	425	291	86	377	400



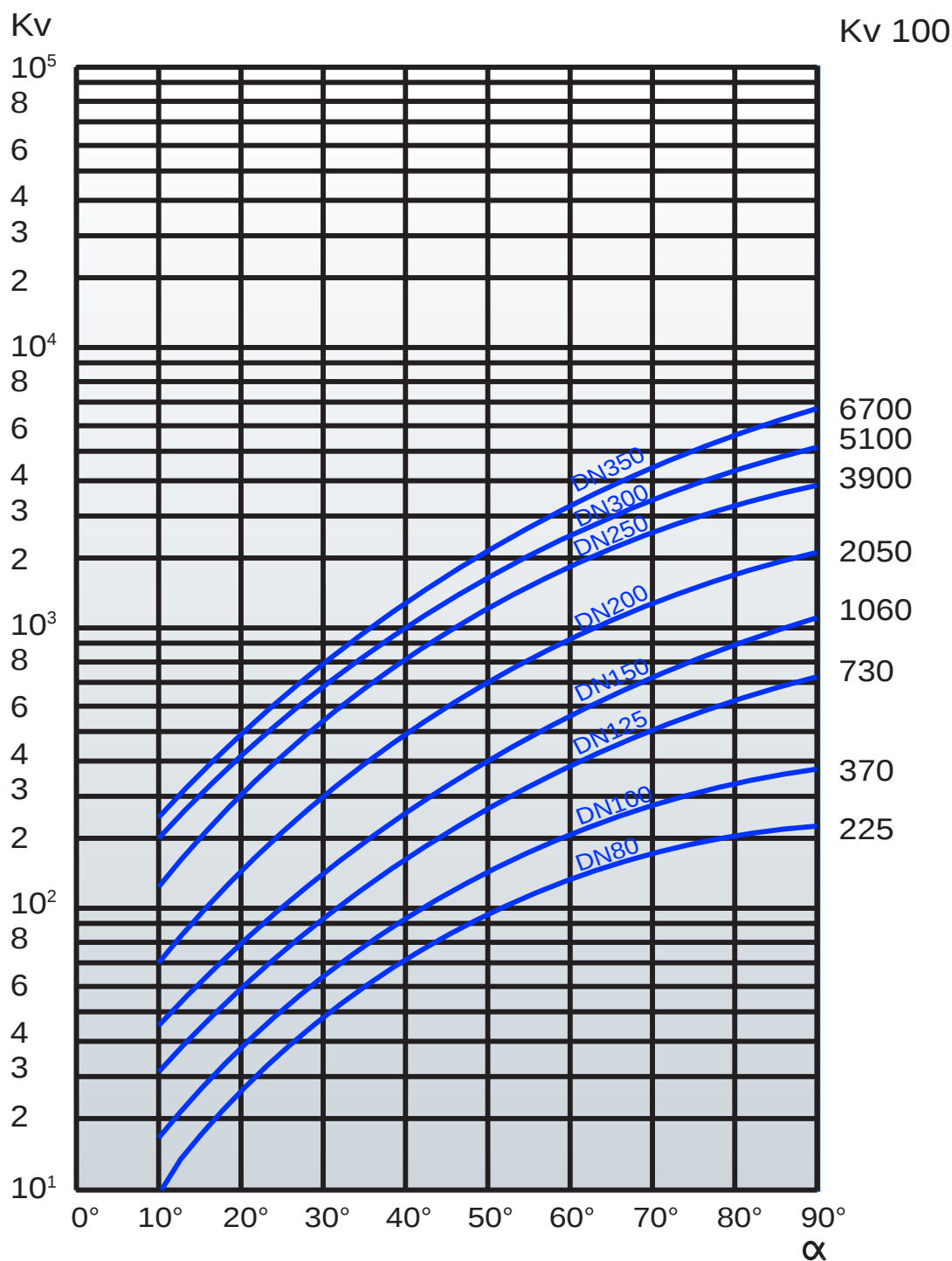
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The control curves

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