

**31200**

# Butterfly valve of carbon steel DN 80 - 600

11.02.2008

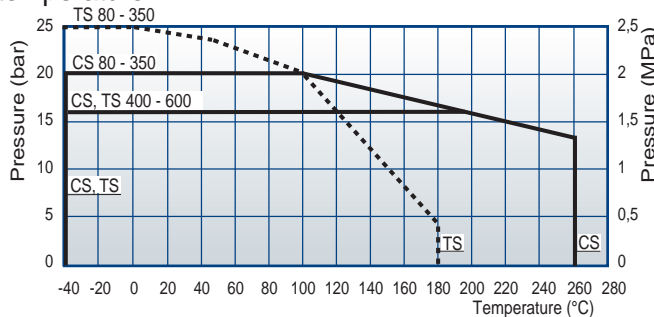
## Operation

Butterfly valve 31200 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
	CS, TS 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

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 16 DIN 3202 K3

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



Nominal dimensions: DN 80 - 600

Product codes:

31200CS	metal seated
31202TS	teflon seated

312..\_\_\_ with handlever up to DN150

312..\_\_\_ Z with bare shaft

312..\_\_\_ M with manual gear

For steam on special order. Code number: 31201CS  
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

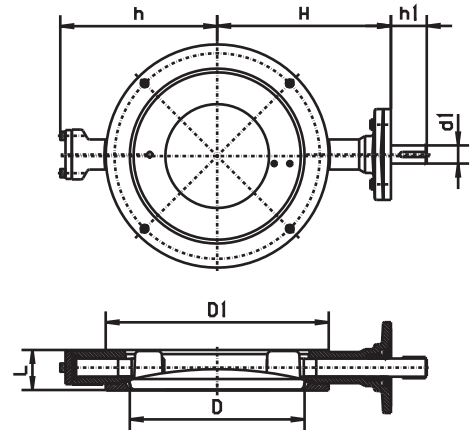
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**Butterfly valve of carbon steel  
DN 80 - 600**

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**Dimensions**

DN	L	D1	D	h	H	h1	d1	Flange ISO5211	Weight kg
80	64	138	72	114	144	45	15	F07	6,5
100	64	158	89	131	168	52	20	F07	7,0
125	70	188	113	143	179	52	20	F07	8,7
150	76	212	137	160	199	58	25	F10	13
200	89	268	187	200	224	58	25	F12	29*)
250	114	320	238	232	269	63	30	F12	38*)
300	114	370	286	275	308	69	35	F14	54*)
350	127	430	337	303	335	69	35	F14	67*)
400	140	482	386	333	380	86	50	F16	118*)
500	152	585	483	388	458	103	60	F16	198*)
600	178	685	582	448	530	119	70	F25	337*)

\*) with manual gear

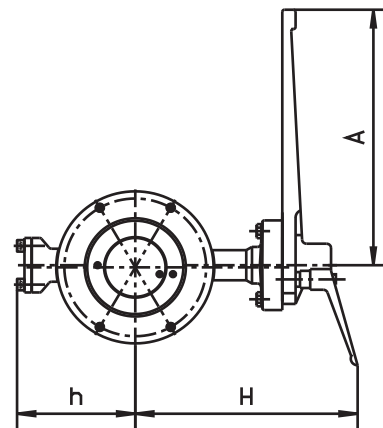

**Operation**

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

**Handlever**

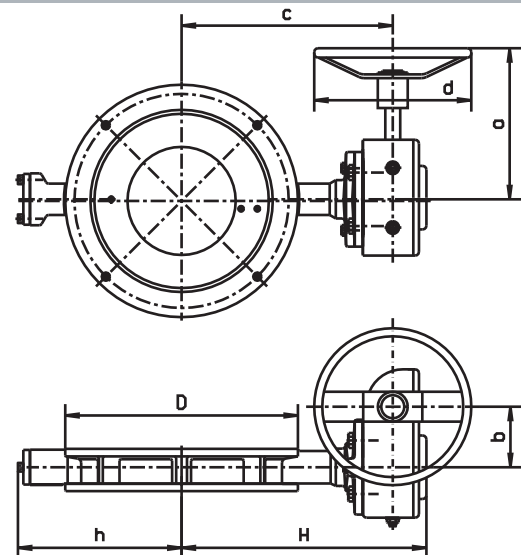
The smaller sizes, DN 80 -150 can be operated with handlever.  
The opening and closing of valves is stepless.  
The valve is open when the handlever is parallel to the pipe.

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


**Manual gear**

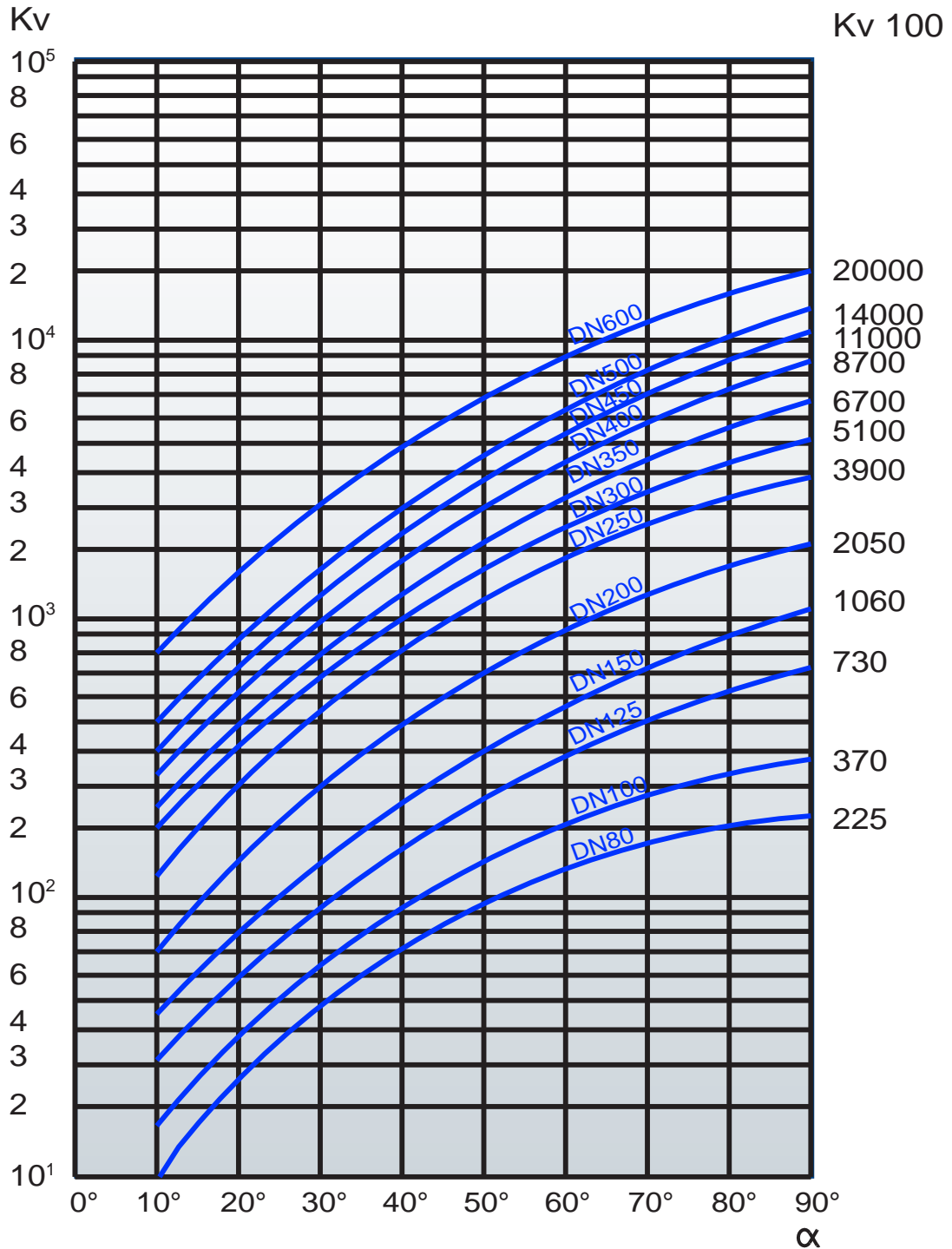
Opening and closing of the valves from the handwheel.  
The position of disc can be seen on a position indicator on top of the gear.

DN	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
400	482	333	501	387	130	435	500
500	585	388	579	387	130	513	500
600	685	448	689	500	263	589	500



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:**

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

$K_v$   
 $DN$   
 $\alpha$   
 $Q$   
 $\Delta p$   
 $\rho$   
 $v$

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