

**31200**

# Butterfly valve of carbon steel DN 80 - 600

06.02.2007

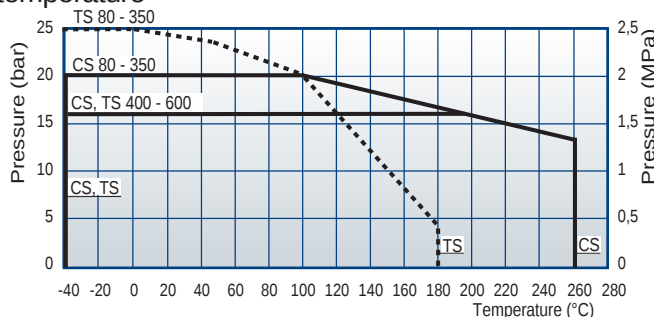
## Operation

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

 0575

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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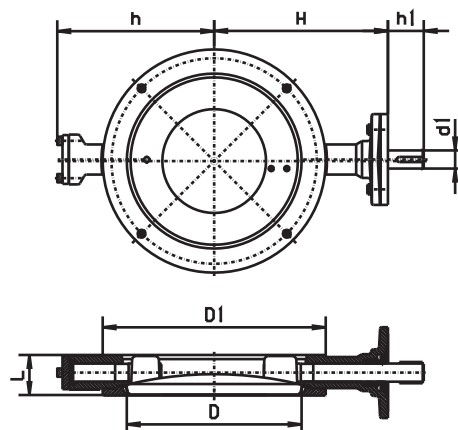
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## Dimensions

| DN  | L   | D1  | D   | h   | H   | h1  | d1 | Flange<br>ISO5211 | Weight<br>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.

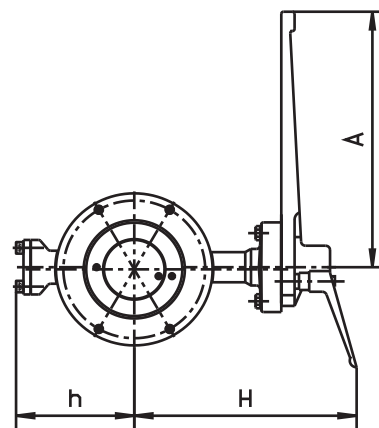
## Handlever

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 |

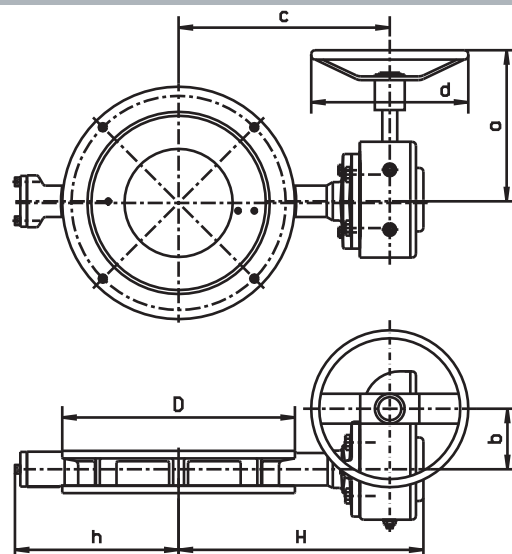


## Manual gear

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 |



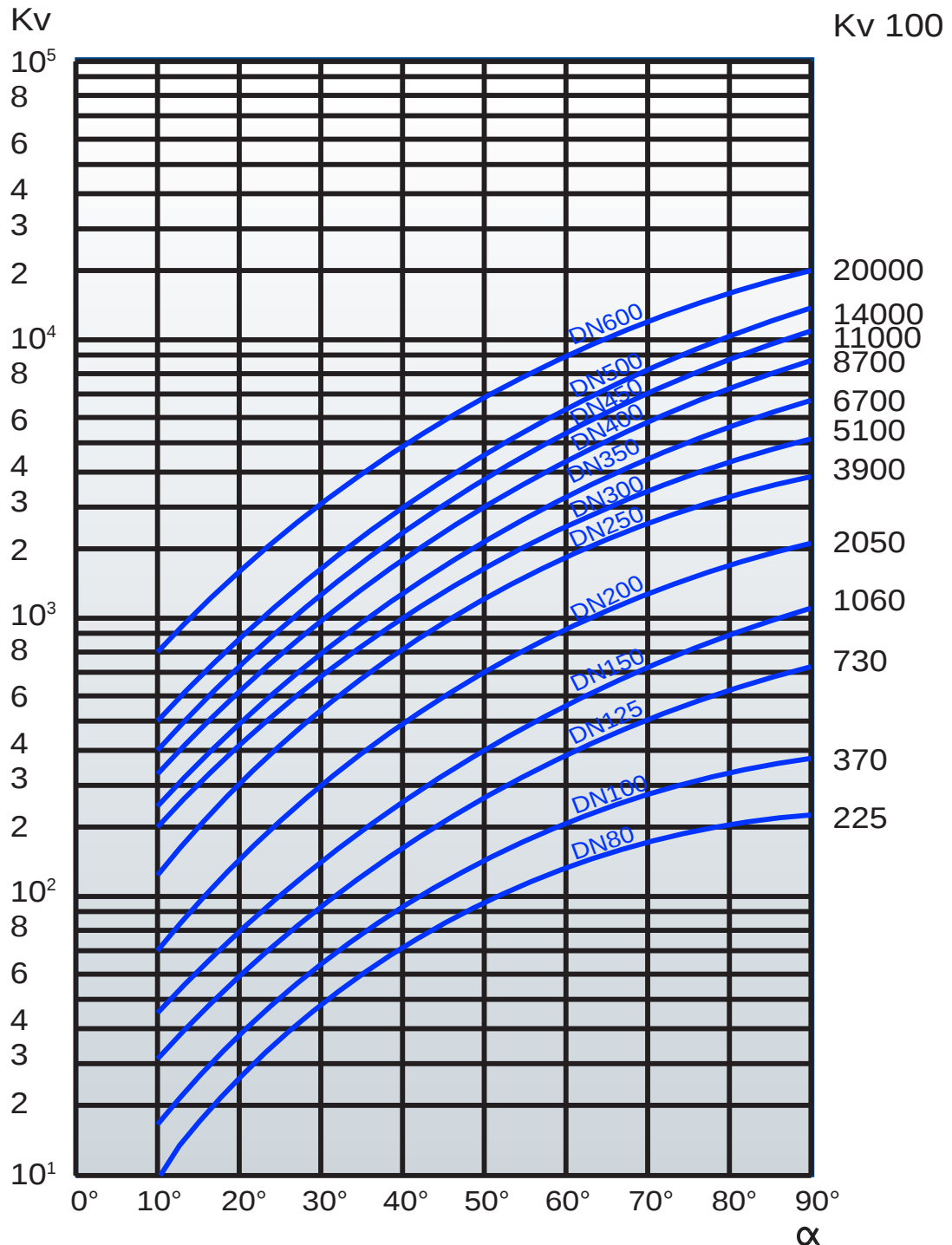
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## The control curves

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

$\alpha$

Q

$\Delta p$

$\rho$

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  $m/s$