

# Disco Check Valves

## Type 930 / 932



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## General description

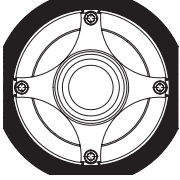
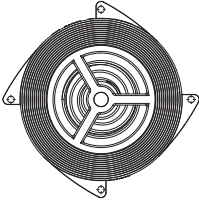
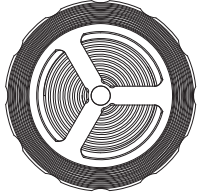
### Description and intended purpose

Disco check valves are suitable for universal use in piping systems for the transport of liquid and gaseous substances as well as in plants or environments in which particularly high demands are placed on the material. They can be installed directly between flanges (PN 6 – PN 160 or Class 150 – Class 900). Disco check valves are maintenance-free.

### Function

Disco check valves require a low opening pressure. The resulting opening force pushes the disc against a spring and, if necessary, also the weight force of the disc (depending on the installation position), so that the medium can flow. If the inlet pressure, the valve closes and seals against the medium by means of the soft seat or the metal seat.

## Overview matrix

|                                   | 930   | 932  |   |
|-----------------------------------|---|--|---|
|                                   |  |  |  |
| nominal sizes                     | DN 15 – DN 100  | DN 15 – DN 100   | DN 125 – DN 300   |
| flange connection <sup>*1</sup>   | PN 6 <sup>*2</sup> / PN 10 / PN 16 /<br>PN 25 / PN 40<br>Class 150 <sup>*2</sup>    | PN 6 / PN 10 / PN 16 /<br>PN 25 / PN 40<br>Class 150 / Class 300                     | PN 10 / PN 16 /<br>PN 25 / PN 40<br>Class 150 / Class 300 <sup>*2</sup>               |
| max. pressure                     | 40 bar  | 50 bar   |   |
| temperature ranges                | -20 °C to +300 °C   | -196 °C to +400 °C <sup>*3</sup>   |   |
| materials available <sup>*4</sup> | stainless steel   | stainless steel / alu bronze /<br>carbon steel / superduplex                         | stainless steel /<br>carbon steel / superduplex                                       |
| seals available                   | metal / NBR / EPDM / FKM / PTFE   | metal / NBR / EPDM / FKM / PTFE  |   |
| special options                   | –   | different opening pressures available  |   |

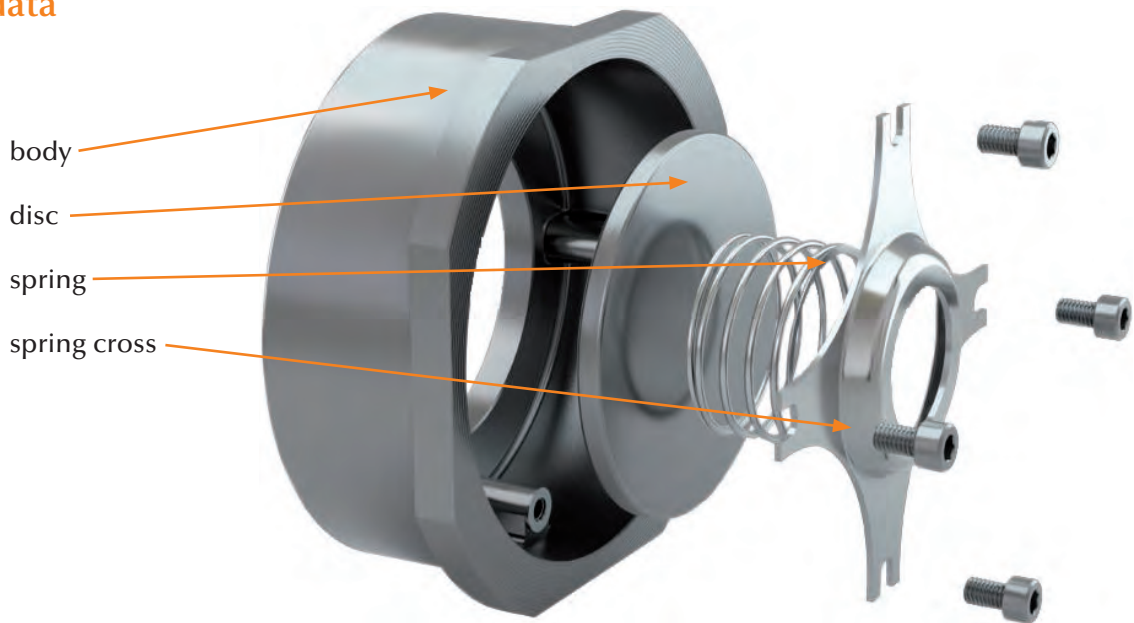
<sup>\*1</sup> other flange connections on request

<sup>\*2</sup> not for all nominal sizes

<sup>\*3</sup> higher or lower temperatures on request

<sup>\*4</sup> other materials on request

Technical data



| Design | Body   | Disc      | Spring cross | Spring | Pressure range*1 |
|--------|--------|-----------|--------------|--------|------------------|
| 1      | 1.4408 | 1.4408 *2 | 1.4436       | 1.4436 | 0 to max. 40 bar |

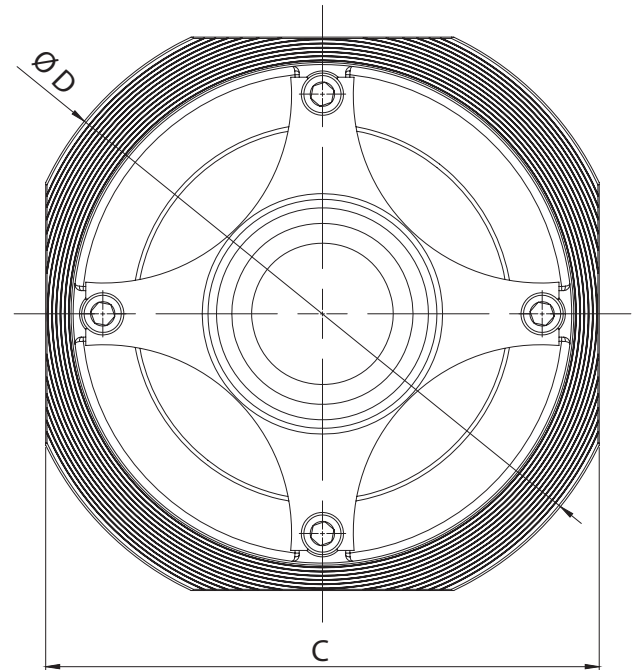
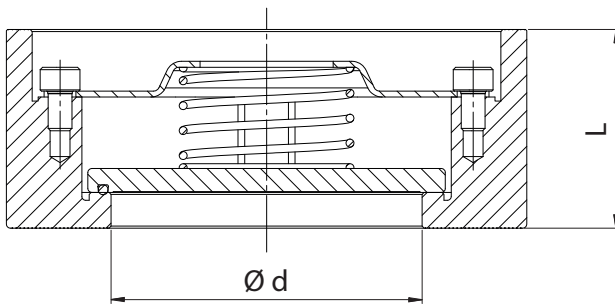
\*1 max. allowable pressure is dependent on the temperature

\*2 soft sealing valve with disc made of 1.4571

| Seal         | Temperature       | Leakage rate*3 |
|--------------|-------------------|----------------|
| Metal seated | -20 °C to +300 °C | ≥G             |
| NBR          | -20 °C to +100 °C | A              |
| EPDM         | -20 °C to +150 °C | A              |
| FKM          | -15 °C to +200 °C | A              |
| PTFE         | -20 °C to +250 °C | A              |

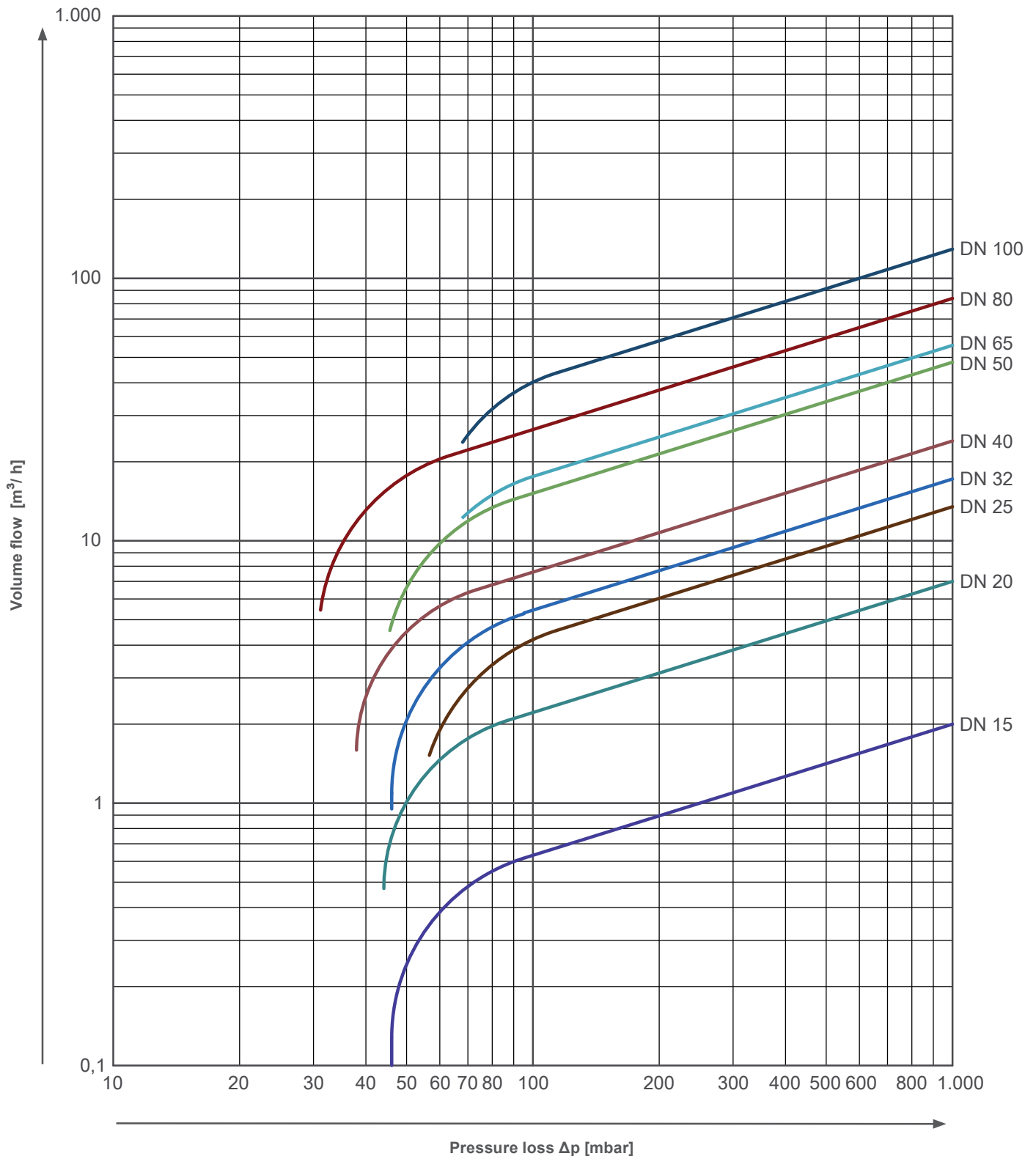
\*3 acc. to EN 12266-1

| Nominal size | Suitable flanges |       |       |       |       |          |
|--------------|------------------|-------|-------|-------|-------|----------|
|              | PN 6             | PN 10 | PN 16 | PN 25 | PN 40 | ANSI 150 |
| DN 15        | -                | x     | x     | x     | x     | -        |
| DN 20        | x                | x     | x     | x     | x     | -        |
| DN 25        | x                | x     | x     | x     | x     | -        |
| DN 32        | -                | x     | x     | x     | x     | -        |
| DN 40        | x                | x     | x     | x     | x     | -        |
| DN 50        | x                | x     | x     | x     | x     | x        |
| DN 65        | x                | x     | x     | x     | x     | -        |
| DN 80        | x                | x     | x     | x     | x     | x        |
| DN 100       | x                | x     | x     | x     | x     | x        |



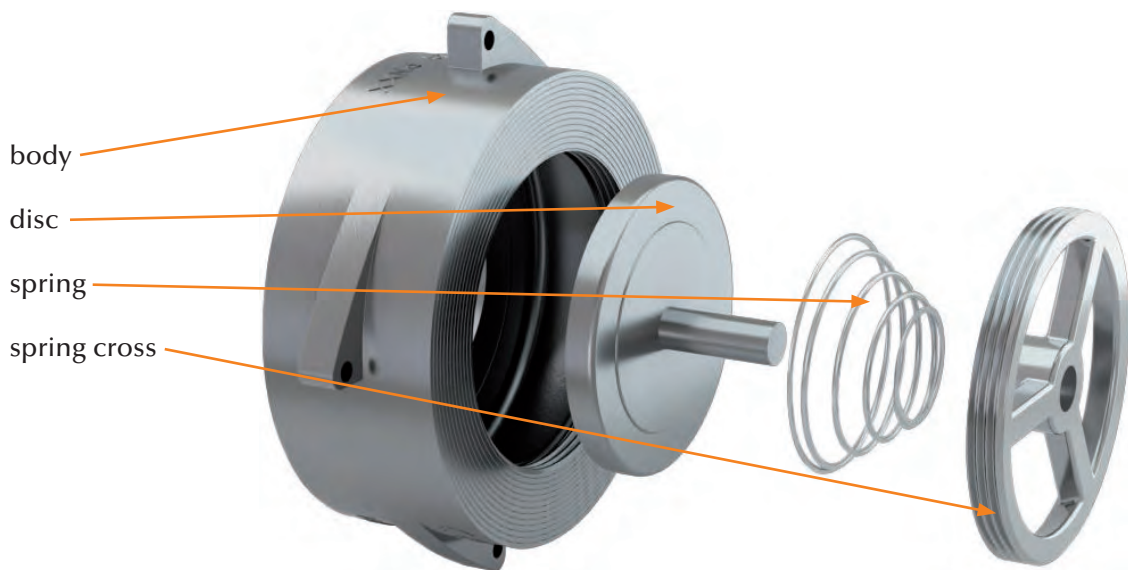
| Nominal size | Ø D | Ø d | C   | L    | Kv value<br>[m³/h] | Opening pressure [mbar] |      |      | w/o spring | Weight |
|--------------|-----|-----|-----|------|--------------------|-------------------------|------|------|------------|--------|
|              |     |     |     |      |                    | ↔                       | ↑    | ↓    | ↑          | [kg]   |
| DN 15        | 53  | 15  | 43  | 16   | 2                  | ~ 47                    | ~ 51 | ~ 43 | ~ 4        | 0.10   |
| DN 20        | 63  | 20  | 53  | 19   | 7                  | ~ 44                    | ~ 48 | ~ 40 | ~ 4        | 0.16   |
| DN 25        | 73  | 25  | 63  | 22   | 13                 | ~ 57                    | ~ 61 | ~ 53 | ~ 4        | 0.28   |
| DN 32        | 84  | 30  | 75  | 28   | 17                 | ~ 47                    | ~ 52 | ~ 42 | ~ 5        | 0.52   |
| DN 40        | 94  | 38  | 86  | 31.5 | 23                 | ~ 38                    | ~ 43 | ~ 33 | ~ 5        | 0.70   |
| DN 50        | 107 | 47  | 95  | 40   | 48                 | ~ 45                    | ~ 52 | ~ 38 | ~ 7        | 1.10   |
| DN 65        | 126 | 62  | 115 | 46   | 55                 | ~ 50                    | ~ 55 | ~ 45 | ~ 5        | 1.58   |
| DN 80        | 145 | 77  | 131 | 50   | 83                 | ~ 31                    | ~ 38 | ~ 24 | ~ 7        | 1.78   |
| DN 100       | 164 | 96  | 150 | 60   | 127                | ~ 55                    | ~ 65 | ~ 45 | ~ 10       | 3.30   |

**Pressure-loss diagram** The diagram values are valid for water at a temperature of 20 °C and for valves with face-to-face dimensions in accordance with DIN EN 558, suitable for flanges in accordance with PN 10 – PN 40. At the opening of the valve, the curves apply to operation in horizontal pipelines. For calculation for other fluids or temperatures, please contact us.



## Technical data

### DN 15 – 100



| Design | Body                 | Disc                 | Spring cross         | Spring                | Pressure range* <sup>1</sup> |
|--------|----------------------|----------------------|----------------------|-----------------------|------------------------------|
| 1      | 1.4408               | 1.4408               | 1.4408               | 1.4571                | 0 to max. 50 bar             |
| 4      | CC333G (2.0975)      | CC333G (2.0975)      | CC333G (2.0975)      | Hastelloy C4 (2.4610) | 0 to max. 50 bar             |
| 4.1    | CC333G (2.0975)      | 1.4408               | 1.4408               | 1.4571                | 0 to max. 50 bar             |
| 5      | 1.0619, zinc plated  | 1.4408               | 1.4408               | 1.4571                | 0 to max. 40 bar             |
| 6      | 1.4469 (Superduplex) | 1.4469 (Superduplex) | 1.4469 (Superduplex) | Hastelloy C4 (2.4610) | 0 to max. 50 bar             |
| 6.1    | 1.4469 (Superduplex) | 1.4408               | 1.4408               | 1.4571                | 0 to max. 50 bar             |

\*<sup>1</sup> max. allowable pressure is dependent on size and temperature

| Seal               | Design  | Temperature                      | Leakage rate* <sup>2</sup> |
|--------------------|---------|----------------------------------|----------------------------|
| Metal seated       | 1       | -196 °C to +400 °C* <sup>3</sup> | G                          |
|                    | 4 / 4.1 | -10 °C to +350 °C* <sup>3</sup>  |                            |
|                    | 5       | -10 °C to +400 °C* <sup>3</sup>  |                            |
|                    | 6 / 6.1 | -10 °C to +250 °C                |                            |
| NBR* <sup>4</sup>  | –       | -30 °C to +100 °C                | A                          |
| EPDM* <sup>4</sup> | –       | -65 °C to +150 °C                | A                          |
| FKM* <sup>4</sup>  | –       | -30 °C to +230 °C                | A                          |
| PTFE* <sup>4</sup> | –       | -196 °C to +250 °C               | A                          |

\*<sup>2</sup> acc. to EN 12266-1

\*<sup>3</sup> temperatures above 300 °C require spring material Hastelloy C4 (low temperature limit for design 1: -100 °C)

\*<sup>4</sup> for some designs, the temperature range is additionally limited by the temperature range of the metallic parts (see temperature range for metal seated)

### Seals comply with the following approvals / conformities:

NBR: DIN EN 549, BAM, REACH, RoHS etc.

EPDM: KTW UBA, DVGW W 270, WRAS, NSF, FDA, BfR XXI Kat. 4, ADI-free, 3A, USP Cl. 6, BAM, REACH, RohS etc.

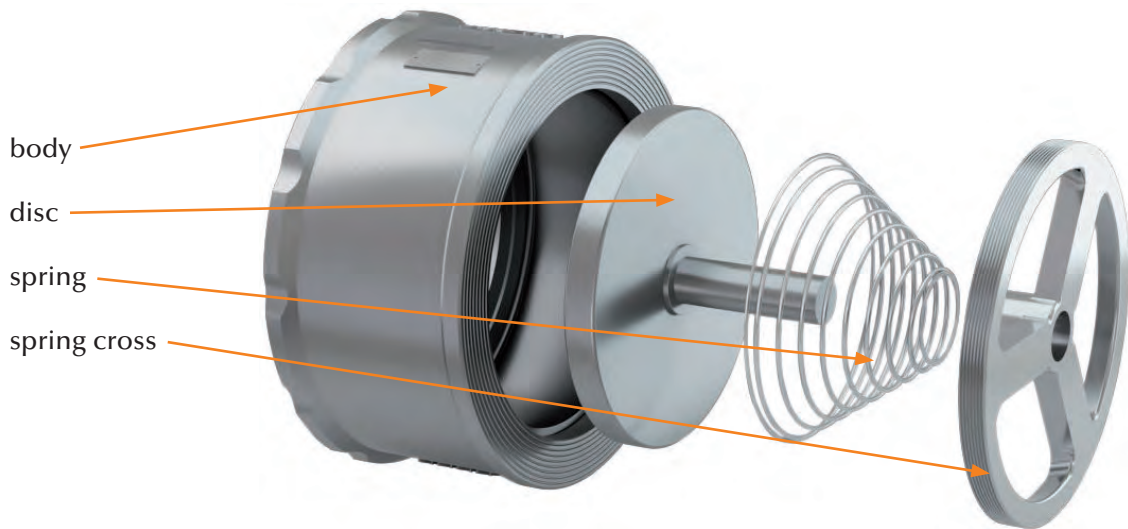
FKM: DIN EN 549, ADI-frei, REACH, RoHS etc.

PTFE: KTW UBA, DVGW W 270, WRAS, FDA, BfR, ADI-free, EU 10/2011, 3A, USP Cl. 6, REACH, RoHS etc.



## Technical data

### DN 125 – 300



| Design | Body                    | Disc                    | Spring cross            | Spring                   | Pressure range* <sup>1</sup> |
|--------|-------------------------|-------------------------|-------------------------|--------------------------|------------------------------|
| 1      | 1.4408                  | 1.4408                  | 1.4408                  | 1.4571                   | 0 to max. 50 bar             |
| 5      | 1.0619, zinc plated     | 1.4408                  | 1.4408                  | 1.4571                   | 0 to max. 50 bar             |
| 6      | 1.4469<br>(Superduplex) | 1.4469<br>(Superduplex) | 1.4469<br>(Superduplex) | Hastelloy C4<br>(2.4610) | 0 to max. 50 bar             |
| 6.1    | 1.4469<br>(Superduplex) | 1.4408                  | 1.4408                  | 1.4571                   | 0 to max. 50 bar             |

\*<sup>1</sup> max. allowable pressure is dependent on size and temperature

| Seal               | Design  | Temperature                      | Leakage rate* <sup>2</sup> |
|--------------------|---------|----------------------------------|----------------------------|
| Metal seated       | 1       | -196 °C to +400 °C* <sup>3</sup> | G                          |
|                    | 5       | -10 °C to +400 °C* <sup>3</sup>  |                            |
|                    | 6 / 6.1 | -10 °C to +250 °C                |                            |
| NBR* <sup>4</sup>  | –       | -30 °C to +100 °C                | A                          |
| EPDM* <sup>4</sup> | –       | -65 °C bis +150 °C               | A                          |
| FKM* <sup>4</sup>  | –       | -30 °C to +230 °C                | A                          |
| PTFE* <sup>4</sup> | –       | -200 °C to +250 °C               | A                          |

\*<sup>2</sup> acc. to EN 12266-1

\*<sup>3</sup> temperatures above 300 °C require spring material Hastelloy C4 (low temperature limit for design 1: -100 °C)

\*<sup>4</sup> for some designs, the temperature range is additionally limited by the temperature range of the metallic parts (see temperature range for metal seated)

### Seals comply with the following approvals / conformities:

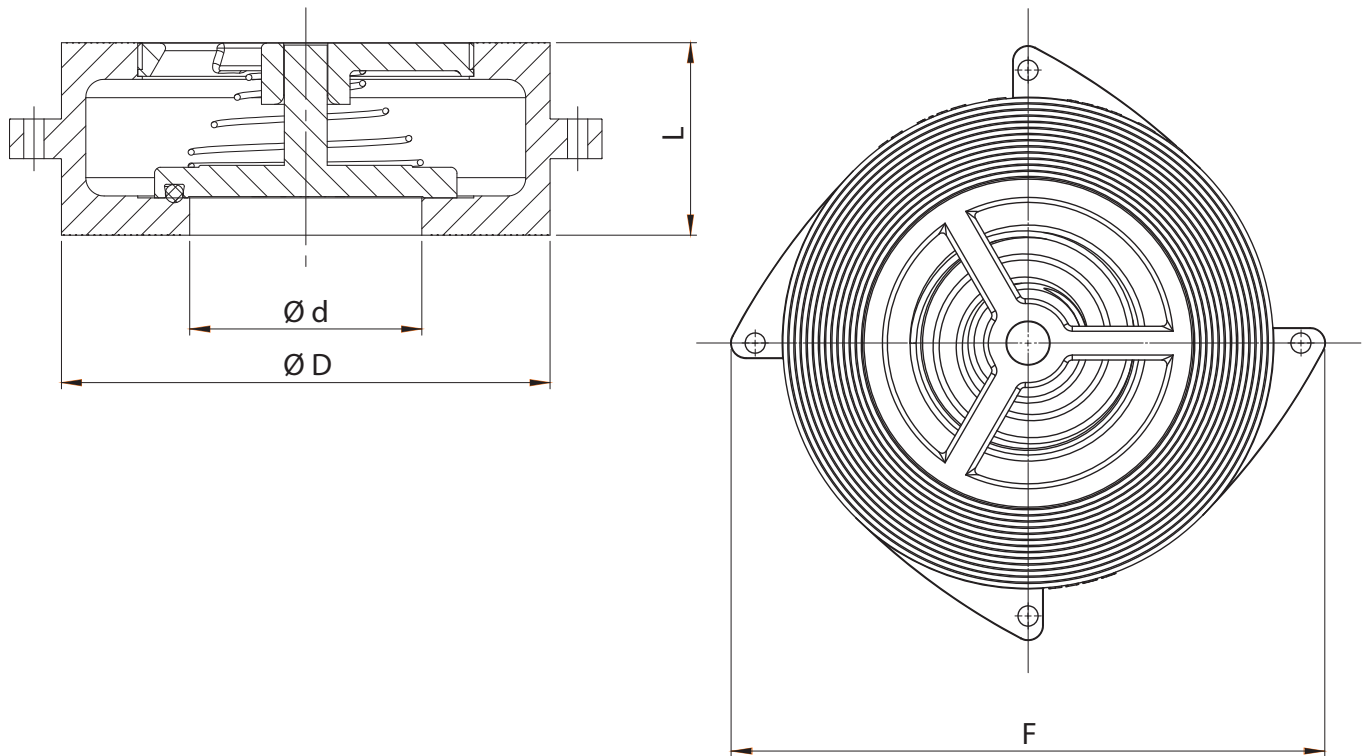
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FKM: DIN EN 549, ADI-frei, REACH, RoHS etc.

PTFE: KTW UBA, DVGW W 270, WRAS, FDA, BfR, ADI-free, EU 10/2011, 3A, USP Cl. 6, REACH, RoHS etc.

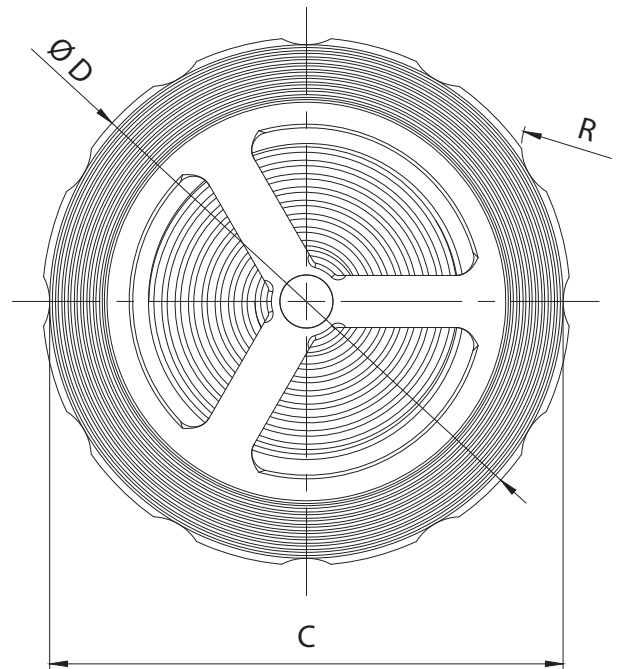
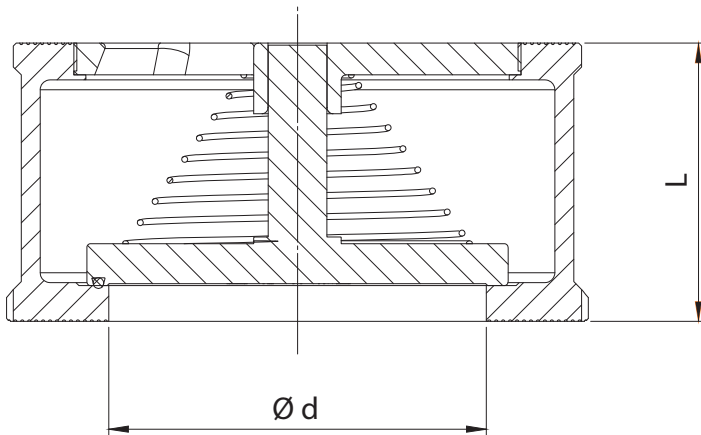




| Nominal size | Ø D | Ø d  | F   | L    | Kv value<br>[m³/h] | Opening pressure* <sup>5</sup> [mbar] |      |      | w/o spring | Weight* <sup>6</sup> |
|--------------|-----|------|-----|------|--------------------|---------------------------------------|------|------|------------|----------------------|
|              |     |      |     |      |                    | ↔                                     | ↑    | ↓    | ↑          | [kg]                 |
| DN 15        | 43  | 15   | 57  | 16   | 4                  | ~ 20                                  | ~ 24 | ~ 16 | ~ 4        | 0.12                 |
| DN 20        | 53  | 19   | 72  | 19   | 7                  | ~ 20                                  | ~ 25 | ~ 15 | ~ 5        | 0.20                 |
| DN 25        | 63  | 25   | 79  | 22   | 10                 | ~ 20                                  | ~ 25 | ~ 15 | ~ 5        | 0.32                 |
| DN 32        | 75  | 32   | 92  | 28   | 17                 | ~ 20                                  | ~ 26 | ~ 14 | ~ 6        | 0.52                 |
| DN 40        | 80  | 38   | 97  | 31.5 | 24                 | ~ 20                                  | ~ 27 | ~ 13 | ~ 7        | 0.62                 |
| DN 50        | 95  | 47   | 113 | 40   | 37                 | ~ 20                                  | ~ 28 | ~ 12 | ~ 8        | 1.1                  |
| DN 65        | 115 | 63   | 137 | 46   | 61                 | ~ 20                                  | ~ 29 | ~ 11 | ~ 9        | 1.7                  |
| DN 80        | 131 | 77   | 154 | 50   | 74                 | ~ 20                                  | ~ 30 | ~ 10 | ~ 10       | 2.5                  |
| DN 100       | 150 | 97,5 | 186 | 60   | 115                | ~ 20                                  | ~ 33 | ~ 7  | ~ 13       | 4.0                  |

\*<sup>5</sup> other opening pressures on request (for high opening pressures the Kv value may be reduced if disc springs must be used)

\*<sup>6</sup> weight may vary slightly, depending on the design



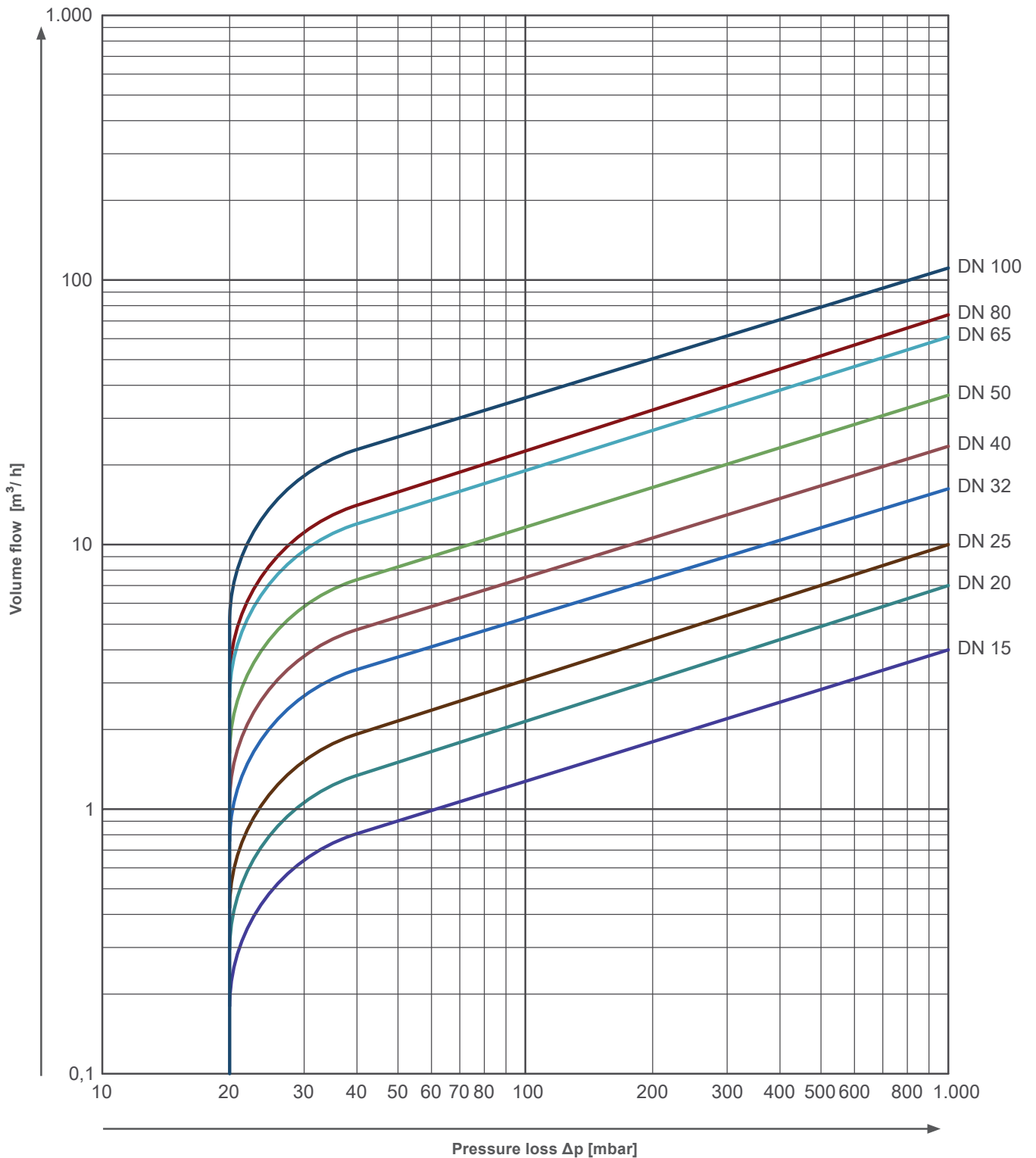
| Nominal size | C        |          | Ø D     |       | R     |          | Ø d | L     | Kv value | Opening pressure* <sup>5</sup> [mbar] |                     |      | w/o spring | Weight* <sup>6</sup> |      |
|--------------|----------|----------|---------|-------|-------|----------|-----|-------|----------|---------------------------------------|---------------------|------|------------|----------------------|------|
|              | PN 10/16 | PN 10/16 | 150 lbs | PN 25 | PN 40 | PN 10/16 |     |       |          | PN 25                                 | [m <sup>3</sup> /h] | ↔    |            |                      | ↑    |
| DN 125       | 194      | 194      | 194     | 194   | 194   | -        | -   | 118.5 | 90       | 201                                   | ~ 30                | ~ 46 | ~ 14       | ~ 16                 | 8.4  |
| DN 150       | 220      | 220      | 220     | 220   | 220   | -        | -   | 141   | 106      | 286                                   | ~ 30                | ~ 47 | ~ 13       | ~ 17                 | 12.4 |
| DN 200       | 275      | 280      | 280     | 286   | 294   | 11       | 30  | 190   | 140      | 553                                   | ~ 30                | ~ 51 | ~ 9        | ~ 21                 | 23.9 |
| DN 250       | 331      | 340      | 340     | 344   | 356   | 13       | 33  | 229   | 145      | 643                                   | ~ 40                | ~ 64 | ~ 16       | ~ 24                 | 39.2 |
| DN 300       | 380      | 386      | 404     | 404   | 421   | 11       | 33  | 280   | 160      | 867                                   | ~ 40                | ~ 68 | ~ 12       | ~ 38                 | 58.3 |

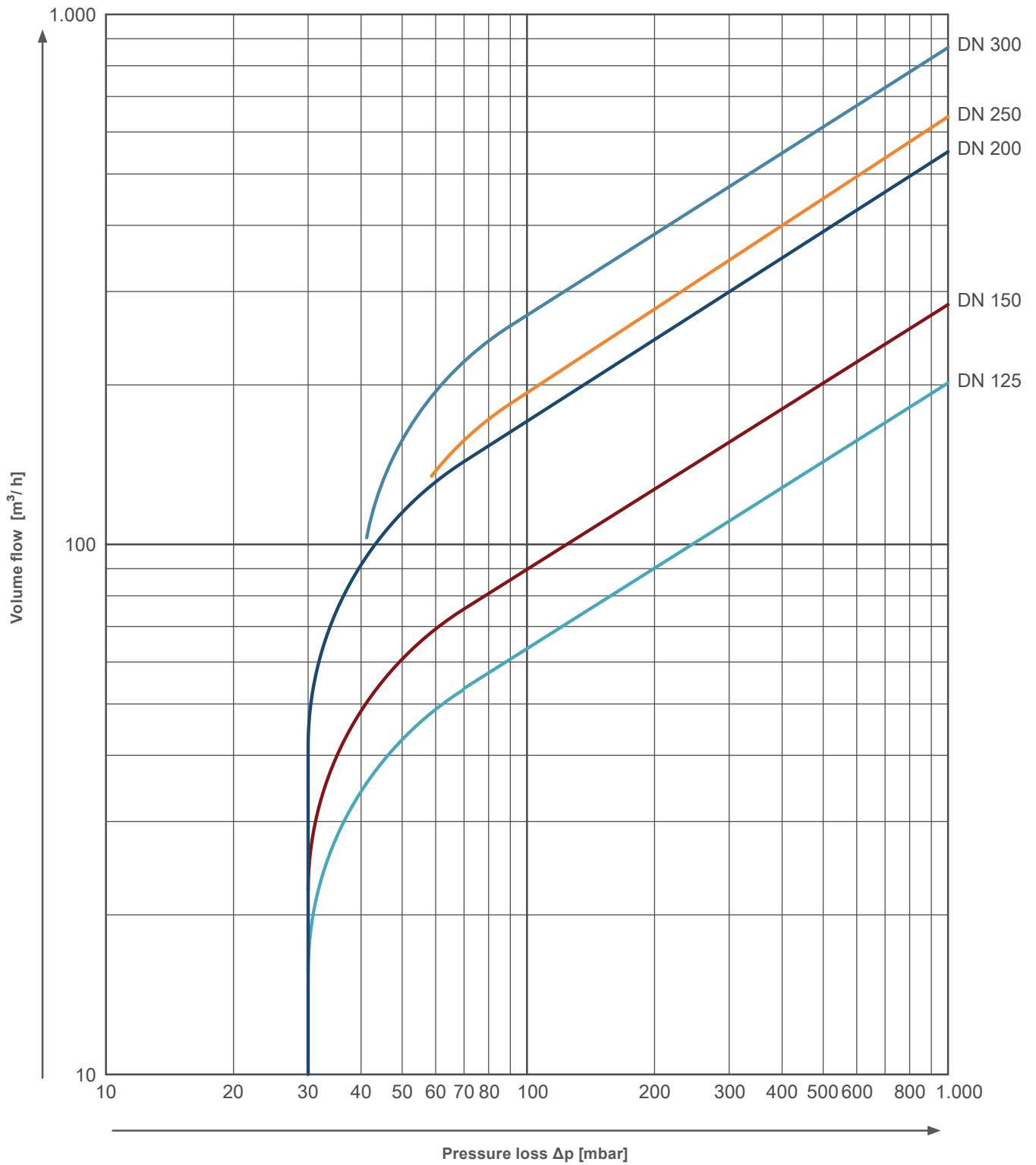
\*<sup>5</sup> other opening pressures on request (for high opening pressures the Kv value may be reduced if disc springs must be used)

\*<sup>6</sup> weight may vary slightly, depending on the design

**Pressure-loss**

The diagram values are valid for water at a temperature of 20 °C and for valves with face-to-face dimensions in accordance with DIN EN 558, suitable for flanges in accordance with PN 10 – PN 40. At the opening of the valve, the curves apply to operation in horizontal pipelines. For calculation for other fluids or temperatures, please contact us.





Type codes

| Type | DN           |        | Material             |                      |                      |                   | Seal                |
|------|--------------|--------|----------------------|----------------------|----------------------|-------------------|---------------------|
|      | Nominal size | Design | Body                 | Disc                 | Spring cross         | Spring            |                     |
| 930  | 15 - 100     | 1      | 1.4408               | 1.4408               | 1.4436               | 1.4436 (F5)       |                     |
| 932  | 15 - 100     | 1      | 1.4408               | 1.4408               | 1.4408               | 1.4571 (F1)*1     | Metal seated (M)    |
|      |              | 4      | CC333G (2.0975)      | CC333G (2.0975)      | CC333G (2.0975)      | Hastelloy C4 (F2) |                     |
|      |              | 4.1    | CC333G (2.0975)      | 1.4408               | 1.4408               | 1.4571 (F1)*1     | NBR (N)             |
|      |              | 5      | 1.0619, galvanized   | 1.4408               | 1.4408               | 1.4571 (F1)*1     | EPDM (E)            |
|      |              | 6      | 1.4469 (Superduplex) | 1.4469 (Superduplex) | 1.4469 (Superduplex) | Hastelloy C4 (F2) |                     |
|      |              | 6.1    | 1.4469 (Superduplex) | 1.4408               | 1.4408               | 1.4571 (F1)       | FKM (F)             |
|      | 125 - 300    | 1      | 1.4408               | 1.4408               | 1.4408               | 1.4571 (F1)*1     | PTFE (Teflon) (T)*3 |
|      |              | 5      | 1.0619, zinc plated  | 1.4408               | 1.4408               | 1.4571 (F1)*1     |                     |
|      |              | 6      | 1.4469 (Superduplex) | 1.4469 (Superduplex) | 1.4469 (Superduplex) | Hastelloy C4 (F2) |                     |
|      |              | 6.1    | 1.4469 (Superduplex) | 1.4408               | 1.4408               | 1.4571 (F1)       |                     |

\*1 metal seated valves require spring material Hastelloy C4 for temperatures above 300 °C

Order example

Disco-RSV 932 / 100 / 1 / M / F1

|               |                   |
|---------------|-------------------|
| Type of valve | Disco check valve |
| Type          | 932               |
| Nominal size  | DN 100            |
| Body / disc   | 1.4408            |
| Seal          | metal seated      |
| Spring        | 1.4571 (F1)       |



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