

## Flange Differential Pressure Control Valve

Fig. 8320

### Specification

Design in accordance with

Flanges comply with EN1092- 2 PN16 / PN25, ASME B16.1 CLASS 125 & CLASS150, BS10 TABLE D & TABLE E

Pressure test according to standards GB/T13927, EN12266-1

### Technical data

Working Pressure: 16bar / 25bar

Dimensions: DN40~DN250

$\Delta P$  Range: 300~1000 mbar (DN40~DN50)  
400~1600 mbar (DN65~DN250)

Max.  $\Delta P$ : PV $\leq$ 3500 mbar

Working Temperature: - 10°C~120°C

### Materials

| Part          | Material        | Specification         |
|---------------|-----------------|-----------------------|
| Body          | Ductile Iron    | EN-JS 1040            |
| Bonnet        | Ductile Iron    | EN-JS 1040            |
| Seat          | Stainless Steel | BS970 304             |
| Trim          | Stainless Steel | BS970 304             |
| Diaphragm     | Composites      | Nylon reinforced EPDM |
| Spring        | Stainless Steel | BS970 304             |
| Testing valve | Brass           | EN 12165 CW602N       |
| Wheel         | ABS / Aluminum  | -                     |

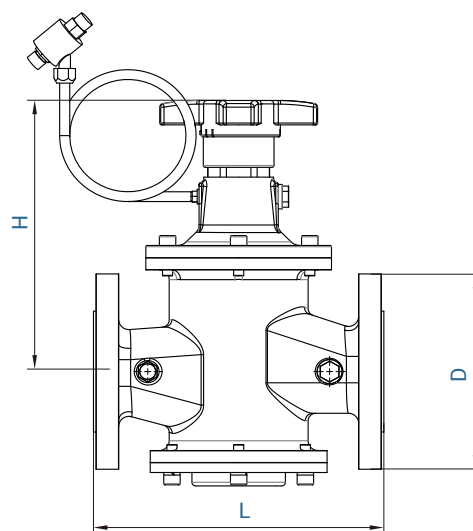
### Dimensions

| Size            | mm   | DN40  | DN50 | DN65  | DN80 | DN100 | DN125 | DN150 | DN200 | DN250 |
|-----------------|------|-------|------|-------|------|-------|-------|-------|-------|-------|
|                 | Inch | 1-1/2 | 2    | 2-1/2 | 3    | 4     | 5     | 6     | 8     | 10    |
| L               |      | 200   | 230  | 290   | 310  | 350   | 400   | 480   | 600   | 730   |
| H               |      | 195   | 213  | 258   | 277  | 295   | 319   | 354   | 375   | 410   |
| D               |      | 145   | 160  | 180   | 195  | 215   | 245   | 280   | 335   | 405   |
| Flow KVs (m³/h) |      | 15    | 34   | 52    | 75   | 110   | 160   | 280   | 320   | 400   |

### Schema



DN40- DN250



WARCO reserves the right to change dimensions without notice.

## Flange Differential Pressure Control Valve

Fig. 8320

### Specification

Design in accordance with

Flanges comply with EN1092- 2 PN16/ PN25, ASME B16.1 CLASS 125 & CLASS150, BS10 TABLE D & TABLE E

Pressure test according to standards GB/T13927

### Technical data

Working Pressure: 16bar / 25bar

Dimensions: DN300~DN500

$\Delta P$  Range: 400~1600 mbar (DN300~DN500)

Max.  $\Delta P$ : PV $\leq$ 3500 mbar

Working Temperature: -10°C~120°C

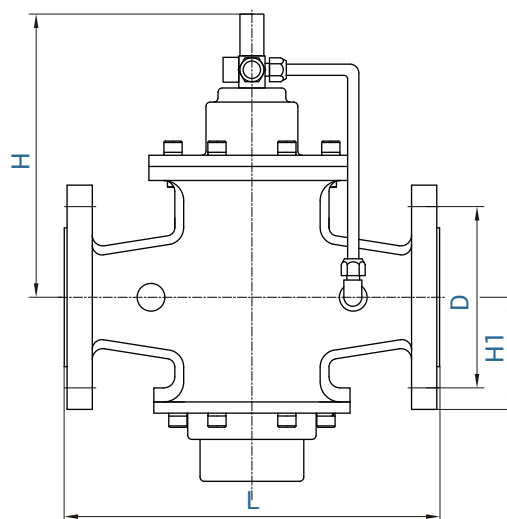
### Materials

| Part           | Material        | Specification         |
|----------------|-----------------|-----------------------|
| Body           | Ductile Iron    | EN-JS 1040            |
| Bonnet         | Ductile Iron    | EN-JS 1040            |
| Seat           | Stainless Steel | BS970 304             |
| Trim           | Stainless Steel | BS970 304             |
| Diaphragm      | Composites      | Nylon reinforced EPDM |
| Spring         | Stainless Steel | BS970 304             |
| Testing valve  | Brass           | HPb59-1               |
| Adjustment kit | Brass           | EN 12165 CW617N       |

### Schema



DN300- DN500



### Dimensions

| Size            | mm   | DN300 | DN350 | DN400 | DN450 | DN500 |
|-----------------|------|-------|-------|-------|-------|-------|
|                 | Inch | 12    | 14    | 16    | 18    | 20    |
| L               |      | 705   | 760   | 785   | 785   | 910   |
| H               |      | 920   | 940   | 1060  | 1060  | 1540  |
| D               |      | 410   | 470   | 525   | 585   | 650   |
| Flow KVs (m³/h) |      | 1300  | 1750  | 2250  | 2540  | 3065  |

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## Flange Differential Pressure Control Valve

Fig. 8311/8320

### Parameter selection

| ΔPL(mbar) | Q(m <sup>3</sup> /h) | DN15 | DN20 | DN25 | DN32 | DN40  | DN50  |
|-----------|----------------------|------|------|------|------|-------|-------|
| 50        | Q(min)               | 0.05 | 0.09 | 0.15 | 0.26 | 0.32  | 0.47  |
|           | Q(nom)               | 0.38 | 0.64 | 0.96 | 1.74 | 2.71  | 3.52  |
|           | Q(max)               | 0.52 | 0.85 | 1.33 | 2.63 | 3.71  | 5.12  |
| 100       | Q(min)               | 0.08 | 0.15 | 0.28 | 0.33 | 0.46  | 0.57  |
|           | Q(nom)               | 0.42 | 0.82 | 1.24 | 2.06 | 2.93  | 5.07  |
|           | Q(max)               | 0.78 | 1.04 | 1.68 | 2.65 | 4.08  | 8.79  |
| 200       | Q(min)               | 0.12 | 0.21 | 0.36 | 0.45 | 0.55  | 0.63  |
|           | Q(nom)               | 0.67 | 1.02 | 1.82 | 2.51 | 3.87  | 7.44  |
|           | Q(max)               | 1.07 | 1.54 | 2.66 | 3.84 | 5.52  | 9.88  |
| 300       | Q(min)               | 0.21 | 0.34 | 0.47 | 0.59 | 0.68  | 0.88  |
|           | Q(nom)               | 0.87 | 1.28 | 2.12 | 3.15 | 4.58  | 9.10  |
|           | Q(max)               | 1.54 | 2.45 | 3.21 | 4.57 | 7.12  | 12.8  |
| 250       | Q(min)               | 0.09 | 0.15 | 0.25 | 0.34 | 0.40  | 0.66  |
|           | Q(nom)               | 0.65 | 1.03 | 1.83 | 2.81 | 4.55  | 7.62  |
|           | Q(max)               | 1.24 | 1.50 | 2.61 | 3.85 | 6.62  | 11.22 |
| 300       | Q(min)               | 0.12 | 0.18 | 0.32 | 0.41 | 0.45  | 0.75  |
|           | Q(nom)               | 1.02 | 1.51 | 2.62 | 3.56 | 5.08  | 9.12  |
|           | Q(max)               | 2.05 | 2.68 | 3.68 | 5.22 | 7.20  | 13.4  |
| 400       | Q(min)               | 0.18 | 0.24 | 0.38 | 0.58 | 0.51  | 0.88  |
|           | Q(nom)               | 1.45 | 2.45 | 3.46 | 4.52 | 5.62  | 10.8  |
|           | Q(max)               | 2.28 | 3.55 | 5.58 | 6.38 | 8.15  | 15.50 |
| 500       | Q(min)               | 0.29 | 0.44 | 0.52 | 0.70 | 0.58  | 0.96  |
|           | Q(nom)               | 1.87 | 3.15 | 4.52 | 5.44 | 6.28  | 12.20 |
|           | Q(max)               | 2.45 | 5.01 | 6.42 | 7.66 | 10.50 | 17.10 |
| 600       | Q(min)               | 0.32 | 0.52 | 0.61 | 0.77 | 0.68  | 1.15  |
|           | Q(nom)               | 2.48 | 4.07 | 5.33 | 6.24 | 7.22  | 13.20 |
|           | Q(max)               | 2.99 | 5.78 | 7.05 | 8.88 | 12.50 | 19.20 |
| 700       | Q(min)               | 0.41 | 0.59 | 0.72 | 0.85 | 0.78  | 1.29  |
|           | Q(nom)               | 2.85 | 5.12 | 7.22 | 8.21 | 7.45  | 14.50 |
|           | Q(max)               | 3.09 | 6.54 | 9.15 | 11.5 | 13.2  | 21.80 |

| ΔPL(mbar) | Q(m <sup>3</sup> /h) | DN40 | DN50 | DN65 | DN80 | DN100 | DN125 | DN150 | DN200 | DN250 |
|-----------|----------------------|------|------|------|------|-------|-------|-------|-------|-------|
| 200       | Q(min)               | 0.42 | 0.51 | 0.65 | 0.85 | 2.04  | 2.95  | 3.8   | 9.51  | 10.8  |
|           | Q(nom)               | 7.14 | 9.84 | 11.2 | 14.5 | 35    | 52    | 66.5  | 83.2  | 94.6  |
|           | Q(max)               | 9.84 | 12.4 | 16.8 | 21.8 | 50    | 74.2  | 95.2  | 118.8 | 135.2 |
| 300       | Q(min)               | 0.51 | 0.71 | 0.87 | 1.45 | 2.6   | 3.55  | 4.8   | 10.7  | 12.6  |
|           | Q(nom)               | 8.24 | 11.2 | 14.5 | 24.8 | 44.7  | 61.8  | 84.5  | 93.5  | 108.6 |
|           | Q(max)               | 12.2 | 18.4 | 21.8 | 33.8 | 64    | 89    | 120.6 | 133.8 | 154.8 |
| 400       | Q(min)               | 0.52 | 0.81 | 1.05 | 1.58 | 2.75  | 4.21  | 5.24  | 12.4  | 14.5  |
|           | Q(nom)               | 10.5 | 14.5 | 18.6 | 28.4 | 48.5  | 72.8  | 93.5  | 107.8 | 125.4 |
|           | Q(max)               | 12.4 | 19.8 | 26.8 | 38.6 | 69.5  | 103.5 | 135.2 | 154.2 | 178.6 |
| 500       | Q(min)               | 0.68 | 1.01 | 1.45 | 1.95 | 3.15  | 4.52  | 6.5   | 13.5  | 15.9  |
|           | Q(nom)               | 12.5 | 16.8 | 21.8 | 38.4 | 54.5  | 51.2  | 112   | 118.2 | 142.3 |
|           | Q(max)               | 19.8 | 21.5 | 30.5 | 51.2 | 77.8  | 116.5 | 160.5 | 168.5 | 201   |
| 600       | Q(min)               | 0.98 | 1.22 | 1.65 | 2.41 | 3.4   | 5.21  | 6.75  | 14.8  | 16.8  |
|           | Q(nom)               | 16.2 | 19.8 | 24.8 | 40.5 | 59.8  | 89.5  | 117.2 | 130.5 | 154.2 |
|           | Q(max)               | 21.5 | 28.4 | 32.8 | 55.8 | 85.2  | 127.5 | 167.5 | 185.4 | 220.4 |
| 700       | Q(min)               | 1.12 | 1.45 | 1.84 | 2.78 | 3.5   | 5.45  | 7.18  | 15.8  | 18.6  |
|           | Q(nom)               | 18.5 | 21.4 | 26.8 | 41.9 | 64.2  | 96.5  | 126.8 | 138.2 | 160.2 |
|           | Q(max)               | 24.5 | 30.4 | 34.5 | 60.5 | 92.2  | 138.5 | 181.2 | 198.2 | 231   |
| 800       | Q(min)               | 1.25 | 1.78 | 2.15 | 3.05 | 4.15  | 6.24  | 7.5   | 18    | 18.5  |
|           | Q(nom)               | 20.3 | 28.5 | 32.4 | 54.2 | 70.1  | 105.2 | 132.2 | 150.2 | 167.1 |
|           | Q(max)               | 32.1 | 41.2 | 52.4 | 75.8 | 100   | 148.9 | 185.4 | 210.5 | 235.5 |

## Flange Differential Pressure Control Valve

Fig. 8311/8320

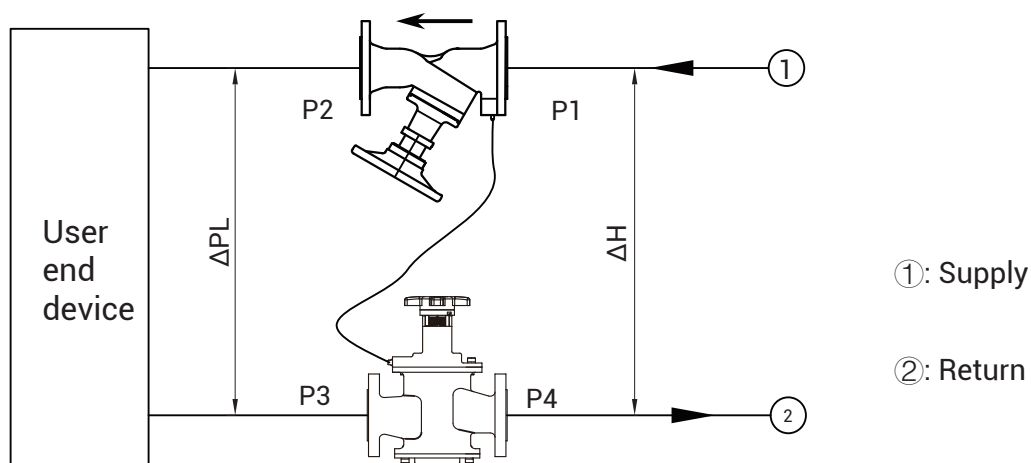
### Parameter selection

(Continued from above)

| $\Delta PL$ (mbar) | Q(m <sup>3</sup> /h) | DN40 | DN50 | DN65 | DN80 | DN100 | DN125 | DN150 | DN200 | DN250 |
|--------------------|----------------------|------|------|------|------|-------|-------|-------|-------|-------|
| 400                | Q(min)               | 0.62 | 0.88 | 1.05 | 1.41 | 2.71  | 4.35  | 5.05  | 12.1  | 13.5  |
|                    | Q(nom)               | 9.85 | 12.8 | 17.2 | 24.2 | 50.4  | 75.5  | 87.5  | 105.8 | 118.2 |
|                    | Q(max)               | 12.4 | 18.5 | 24.3 | 34.5 | 72.1  | 107.4 | 124.5 | 150.2 | 168.2 |
| 500                | Q(min)               | 0.65 | 0.98 | 1.22 | 1.65 | 3.15  | 4.78  | 6.21  | 14.2  | 15    |
|                    | Q(nom)               | 10.4 | 14.6 | 20.1 | 27.4 | 55.4  | 82    | 108.9 | 125   | 130.2 |
|                    | Q(max)               | 14.8 | 21.2 | 28.3 | 38.5 | 78.2  | 117.5 | 157.4 | 177.8 | 184.9 |
| 600                | Q(min)               | 0.85 | 1.01 | 1.45 | 1.85 | 3.55  | 5.22  | 6.41  | 14.8  | 16.4  |
|                    | Q(nom)               | 12.5 | 17.5 | 21.6 | 32.5 | 61    | 92.2  | 112.5 | 132.2 | 142.8 |
|                    | Q(max)               | 18.4 | 25.4 | 30.5 | 46.1 | 86.5  | 131.5 | 160.5 | 189.2 | 204.5 |
| 700                | Q(min)               | 0.92 | 1.22 | 1.35 | 2.01 | 3.81  | 5.68  | 7.11  | 16.8  | 18.2  |
|                    | Q(nom)               | 14.2 | 19.4 | 23.1 | 33.6 | 66.8  | 96.5  | 120.4 | 148.5 | 160.8 |
|                    | Q(max)               | 20.5 | 27.6 | 33.5 | 50.8 | 95.5  | 140.5 | 174.2 | 211.6 | 231.2 |
| 800                | Q(min)               | 1.04 | 1.31 | 1.52 | 2.17 | 4.12  | 5.98  | 7.45  | 18.4  | 18.9  |
|                    | Q(nom)               | 17.2 | 21.4 | 25.2 | 36.5 | 70.5  | 104.8 | 128.6 | 164.2 | 168.2 |
|                    | Q(max)               | 22.5 | 29.4 | 35.6 | 52.1 | 100.5 | 150.8 | 185.4 | 233.6 | 240.1 |
| 900                | Q(min)               | 1.24 | 1.54 | 1.62 | 2.24 | 4.22  | 6.5   | 8.21  | 19.5  | 21.2  |
|                    | Q(nom)               | 18.5 | 22.4 | 26.4 | 38.5 | 73.5  | 112   | 142.5 | 172.2 | 185.5 |
|                    | Q(max)               | 24.8 | 31.2 | 37.8 | 55.1 | 104.5 | 160.2 | 204.1 | 245.6 | 265.3 |
| 1000               | Q(min)               | 1.42 | 1.58 | 1.7  | 2.38 | 4.42  | 7.08  | 8.45  | 19.8  | 22.4  |
|                    | Q(nom)               | 19.5 | 24.5 | 27.8 | 40.2 | 75.8  | 120.5 | 147.2 | 177.5 | 195.6 |
|                    | Q(max)               | 26.7 | 34.2 | 39.5 | 57.9 | 110.5 | 174.2 | 211.2 | 255.4 | 278.5 |
| 1100               | Q(min)               | 1.38 | 1.55 | 1.66 | 2.41 | 4.56  | 7.11  | 8.45  | 21.2  | 22.8  |
|                    | Q(nom)               | 20.4 | 24.8 | 28.4 | 42.5 | 80.9  | 124.2 | 152.1 | 185.4 | 206.5 |
|                    | Q(max)               | 28.5 | 35.8 | 41.2 | 60.6 | 115.8 | 175.4 | 218.5 | 265.3 | 298.4 |
| 1200               | Q(min)               | 1.42 | 1.61 | 1.75 | 2.65 | 4.88  | 7.22  | 9.12  | 22.8  | 24.3  |
|                    | Q(nom)               | 22.4 | 26.2 | 31   | 41.5 | 85.2  | 127.4 | 158   | 204.1 | 213.2 |
|                    | Q(max)               | 30.4 | 36.8 | 42.6 | 64.2 | 120.5 | 180.6 | 224.5 | 288.5 | 305.4 |
| 1300               | Q(min)               | 1.51 | 1.68 | 1.81 | 2.71 | 5.12  | 7.44  | 9.45  | 24.1  | 24.8  |
|                    | Q(nom)               | 24.2 | 26.9 | 31.2 | 45.2 | 87.6  | 130.5 | 160.4 | 210.5 | 222.1 |
|                    | Q(max)               | 32.1 | 37.5 | 44.5 | 65.2 | 125.4 | 182.4 | 233.5 | 300.5 | 318.5 |
| 1400               | Q(min)               | 1.62 | 1.74 | 1.88 | 2.7  | 5.22  | 7.56  | 9.55  | 24.2  | 26.5  |
|                    | Q(nom)               | 25.8 | 27.4 | 31.6 | 45.8 | 91.4  | 132.8 | 168.2 | 215.6 | 233.2 |
|                    | Q(max)               | 34.1 | 38.4 | 44.6 | 65.8 | 130.5 | 189.8 | 241.5 | 304.2 | 330.4 |
| 1500               | Q(min)               | 1.68 | 1.84 | 2.05 | 2.88 | 5.41  | 8.05  | 9.54  | 24.2  | 27.5  |
|                    | Q(nom)               | 26.5 | 28.4 | 32.6 | 47.5 | 94.2  | 140.5 | 170.4 | 222.5 | 244.1 |
|                    | Q(max)               | 35.4 | 40.5 | 46.5 | 68   | 135.2 | 200.4 | 246.3 | 320.4 | 349.8 |
| 1600               | Q(min)               | 1.82 | 1.92 | 2.21 | 2.95 | 5.58  | 8.28  | 9.88  | 26.8  | 28.5  |
|                    | Q(nom)               | 27.6 | 29.4 | 33.4 | 50.2 | 98.8  | 144.5 | 172.4 | 238.5 | 255.4 |
|                    | Q(max)               | 37.5 | 42.2 | 48.5 | 71.4 | 140.5 | 205.1 | 248.5 | 340.8 | 358.6 |

1. Select  $\Delta PL$  data from the table above.
2. Select the valve with the valve Size equal to the pipe Size.
3. Confirm that the water flow rate is less than the Q(max) value in the parameter table.

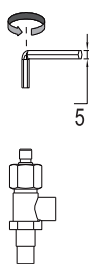
### Installation instructions



#### Attentions:

DPCV usually installed in return pipe, please installing the valve in the right flow direction.

### Setting instruction



- 1、Open the 3-way measuring valve.
- 2、Open the air release cock and turn it off after emptying the air.

