

# C 101

Control valves

Downstream stabilisers

## Technical Data Sheet



## Description

The control valves C 101 controls and maintains a constant preset reduced downstream pressure regardless of variations in downstream demand or upstream pressure (the setting of downstream pressure is always below the upstream pressure).



### C 101

Control valves - Downstream stabilisers

| DN |     | PN       | PFA<br>in bar | PS |    |    |    | Cat | Ref.              | Weight*<br>Kg |
|----|-----|----------|---------------|----|----|----|----|-----|-------------------|---------------|
| "  | mm  |          |               | L1 | L2 | G1 | G2 |     |                   |               |
| 1  | 1/2 | 10/16/25 | 25            | 25 | 25 | x  | x  | 4.3 | <b>149B001149</b> | 8             |
|    | 40  | 10/16/25 | 25            | 25 | 25 | x  | x  | 4.3 | <b>149B001158</b> | 12            |
|    | 50  | 10/16/25 | 25            | 25 | 25 | x  | x  | 4.3 | <b>149B001175</b> | 13            |
|    | 65  | 10/16/25 | 25            | 25 | 25 | x  | x  | 4.3 | <b>149B10106N</b> | 21            |
|    | 80  | 10/16/25 | 25            | 20 | 25 | x  | x  | 4.3 | <b>149B10108N</b> | 26            |
|    | 100 | 10/16    | 16            | 16 | 16 | x  | x  | 4.3 | <b>149B10110N</b> | 39            |
|    | 125 | 10/16    | 16            | 16 | 16 | x  | x  | 4.3 | <b>149B10111N</b> | 59            |
|    | 150 | 10/16    | 16            | 16 | 16 | x  | x  | 4.3 | <b>149B10112N</b> | 73            |
|    | 200 | 10       | 10            | 10 | 10 | x  | x  | 4.3 | <b>149B10114N</b> | 122           |
|    | 250 | 10       | 10            | 10 | 10 | x  | x  | I   | <b>149B10115N</b> | 208           |
|    | 300 | 10       | 10            | 10 | 10 | x  | x  | I   | <b>149B10116N</b> | 328           |
|    | 200 | 16       | 16            | 10 | 16 | x  | x  | 4.3 | <b>149B001342</b> | 122           |
|    | 250 | 16       | 16            | 10 | 16 | x  | x  | I   | <b>149B001352</b> | 208           |
|    | 300 | 16       | 16            | 10 | 16 | x  | x  | I   | <b>149B001361</b> | 328           |
|    | 100 | 25       | 25            | 20 | 25 | x  | x  | 4.3 | <b>149B001285</b> | 39            |
|    | 125 | 25       | 25            | 16 | 25 | x  | x  | 4.3 | <b>149B001301</b> | 59            |
|    | 150 | 25       | 25            | 13 | 25 | x  | x  | 4.3 | <b>149B001329</b> | 73            |
|    | 200 | 25       | 25            | 10 | 25 | x  | x  | 4.3 | <b>149B001345</b> | 122           |
|    | 250 | 25       | 25            | 10 | 25 | x  | x  | I   | <b>149B001354</b> | 208           |
|    | 300 | 25       | 25            | 10 | 25 | x  | x  | I   | <b>149B001362</b> | 328           |

\* Weight of valve alone

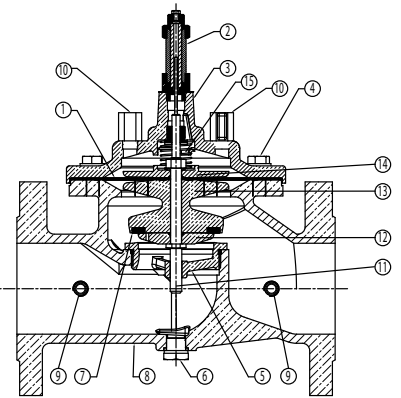
#### Important notice :

The indicated pressure for the different categories of fluids (L1/L2/G1/G2) is under no condition a guarantee of use. Therefore, it is essential to validate the use of products under given operating conditions.

| Technical features    |   |
|-----------------------|---|
| Operating temperature | -10 °C to 90 °C   |
| Upstream pressure     | Mini. : 1 bar / Maxi. : 25 bar according to PN (see table above)              |
| Connection            | DN 40 to 300 mm : with flange PN (see table above)<br>DN 1"1/2 : threaded F/F |
| Mediums               | Clear water 2 mm  |
| Vertical mounting     | In optional   |

## Nomenclature and materials

| N°   | Description                   | Materials                                  | EURO  | ANSI   |
|------|-------------------------------|--|---|--|
| 1    | Membrane                      | EPDM / Polyamide                           |   |  |
| 2    | Position indicator with purge | Brass and stainless steel<br>EPDM<br>Cu    | EN 12164-CuZn39Pb3-R360min<br>EN 10088-3-X5CrNi18-10        | ASTM B36 / ASTM B121<br>AISI 304 / ASTM A240 |
| 3    | Valve head high pressure      | Ductile iron / Epoxy Int/Ext               | EN 1563 EN-GJS-400-15<br>except DN 125 : EN 1561-EN-GJL-300 | ASTM A536 60-40-18<br>ASTM A48 class 45B     |
| 4    | Nuts and bolts                | Stainless steel                            | EN 10088-3-X5CrNi18-10                                      | AISI 304 / ASTM A240                         |
| 5    | Removable streamlined         | Stainless steel                            | EN 10213-GX5CrNi19-10+AT                                    | AISI 304 / ASTM A240                         |
| 6    | Body drain plug               | Brass                                      | EN 12164-CuZn39Pb3-R360min                                  | ASTM B36 / ASTM B121                         |
| 7    | Reversible seal               | EPDM                                       |   |  |
| 8    | Body high pressure            | Ductile iron / Epoxy Int/Ext<br>150µ ± 50µ | EN 1563 EN-GJS-400-15<br>except DN 125 : EN 1561-EN-GJL-300 | ASTM A536 60-40-18<br>ASTM A48 class 45B     |
| 9-10 | Valve                         | Chromed brass                              |   |  |
| 11   | Stem                          | Stainless steel                            | EN10213-GX5CrNi19-10-AT                                     | AISI 304 / ASTM A240                         |
| 12   | Flange                        | Stainless steel                            | EN10088-3X5CrNi18-10  | AISI 304 / ASTM A240                         |
| 13   | Seal carrier                  | Bronze (DN40-50)<br>Cast iron / Epoxy      | EN1982 CuSn5Zn5Pb2-C GS<br>EN1561-EN-GJL-250                | ASTM A 48 35 B                               |
| 14   | Plate                         | Bronze (DN40-50)<br>Cast iron / Epoxy      | EN1982 CuSn5Zn5Pb2-C GS<br>EN1561-EN-GJL-250                | ASTM A 48 35 B                               |
| 15   | Spring                        | Stainless steel                            | EN10270-3 X10CrNi18-8                                       | AISI 302                                     |



standard flow valve

## Approvals



### International construction Standards :

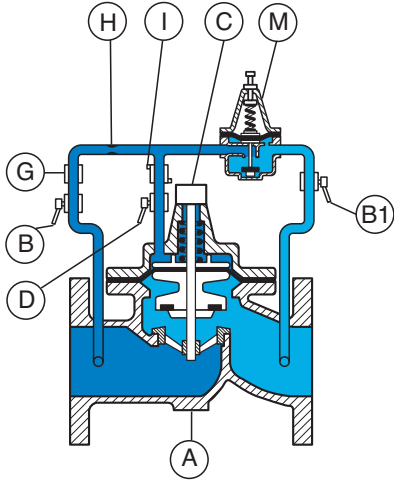
Directive 2014/68/UE

Connection with flange PN according to EN 1092-2

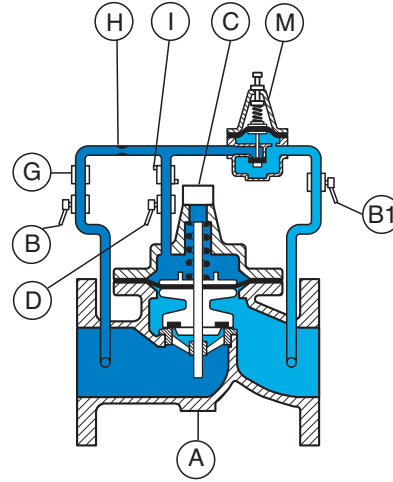
## Application

The control valves C101 reduces pressure in a distribution, irrigation or pump outlet system.

## Operation



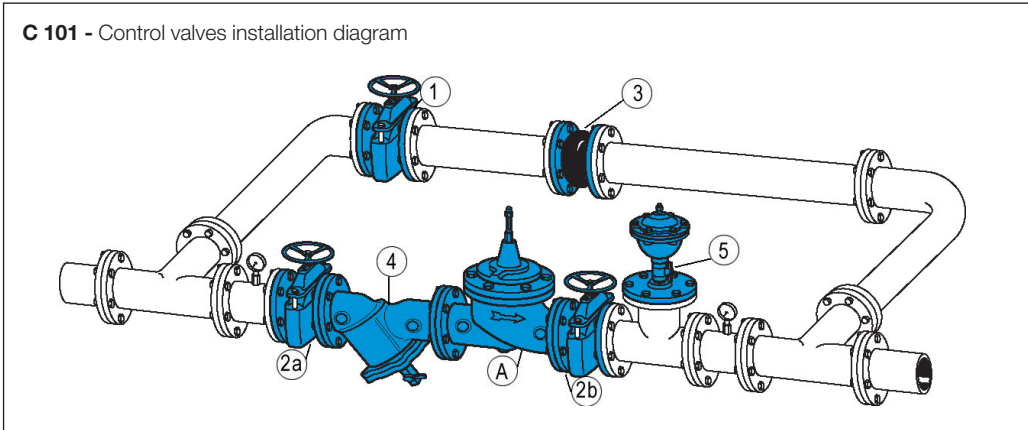
When the pilot (M) opens, pressure in the upper chamber is released and the valve (A) opens, reproducing the movement of the pilot.



When the pilot (M) closes, pressure in the upper chamber rises also and forces the membrane to close the main valve (A) which reproduces the movement of the pilot.

## Installation

C 101 - Control valves installation diagram



| N° | Description                                       |
|----|---|
| A  | Main valve  |
| B  | Upstream isolation valve                          |
| B1 | Downstream isolation valve                        |
| C  | Position indicator with drain                     |
| D  | Chamber isolation valve                           |
| G  | Filter  |
| H  | Orifice-needle valve                              |
| I  | Flow control                                      |
| M  | Pilot C101  |
| 1  | Isolation valve of the by-pass                    |
| 2a | Upstream isolation valve of the main water pipe   |
| 2b | Downstream isolation valve of the main water pipe |
| 3  | Rubber expansion joint                            |
| 4  | Filter  |
| 5  | Single function air valve                         |

**Setting range :**

- 0,4 to 5,51 bar
- 1,72 to 8,5 bar (standard)
- 2,06 to 24,5 bar

**Installation :**

- Install a strainer upstream
- Install an air relief valve down-stream or at the high point near the control valve
- Horizontal setting up : the cap of the valve should be oriented to the top and inclined at 45° maximum
- Vertical setting up : change the spring of the main valve (option 7)

**Other types :**

- C101C, C101DS, C101M, C101S
- FKM seals in the main valve and in the pilot
- 316TI stainless steel fittings

## Maintenance

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We recommend a maintenance programme of between 6 to 12 months according to the quality of the water and to the pressure :

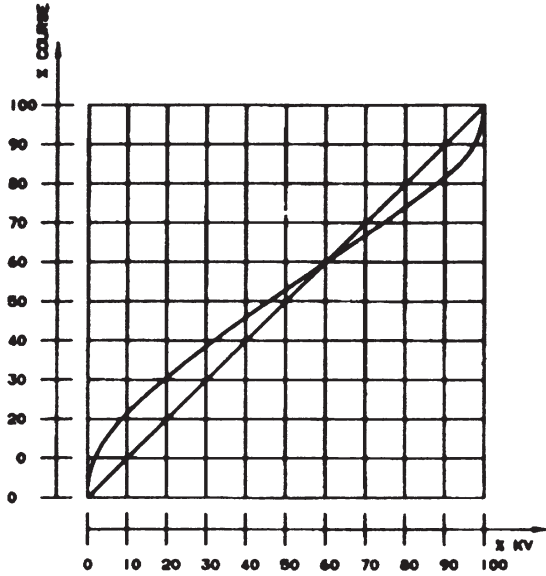
- Purging the upper chamber
- Flushing the valves not frequently used
- Checking and cleaning filters of the pilot circuit and main piping system.
- Checking the working (pressures)

Every 5 years, general maintenance is advisable :

- Dismantling
- Cleaning of main valve and pilot valve
- Preventive removing of the seals (set available - please consult us)
- Reassembling and tests.

# Operating characteristics

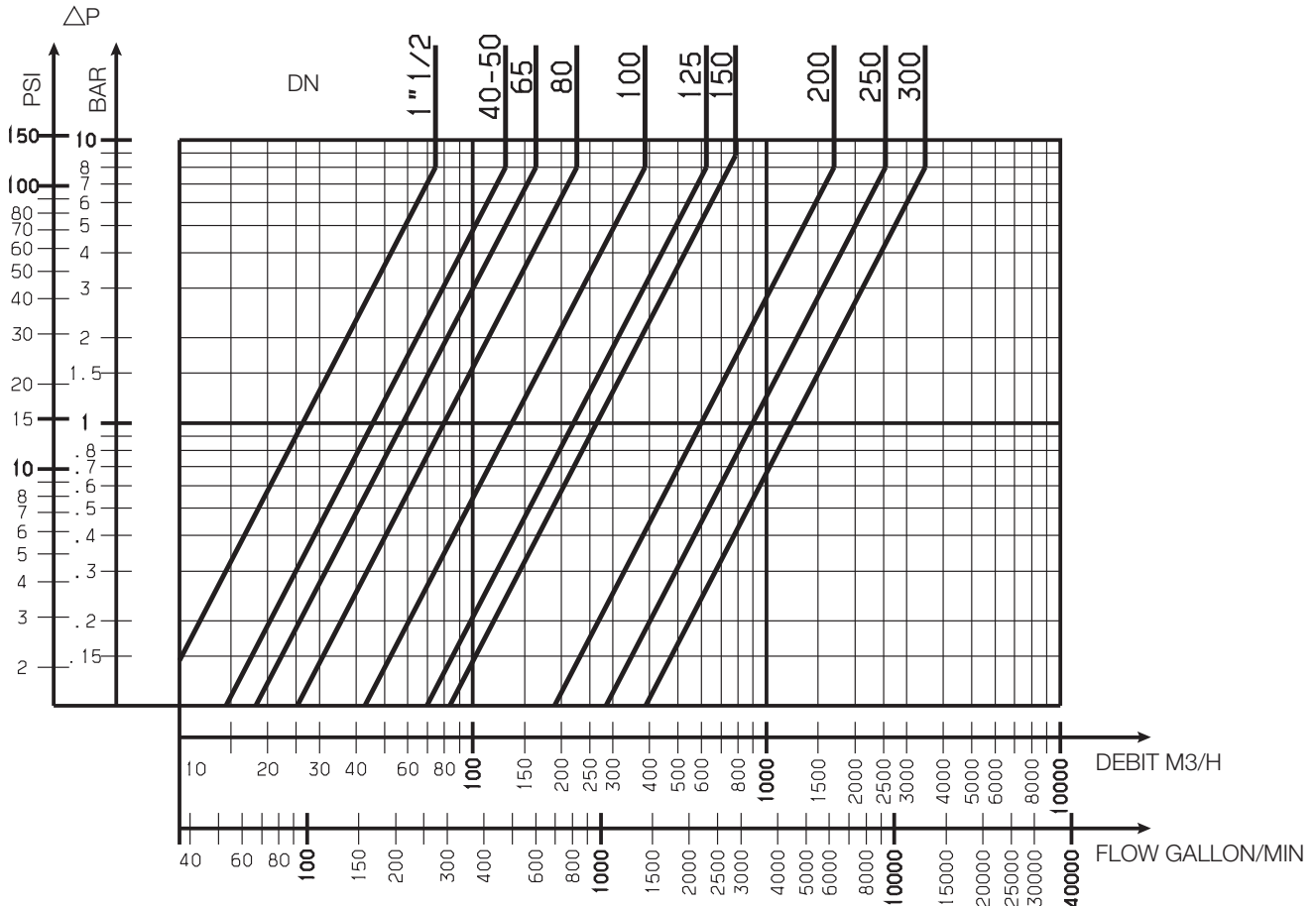
## Choice of base valve



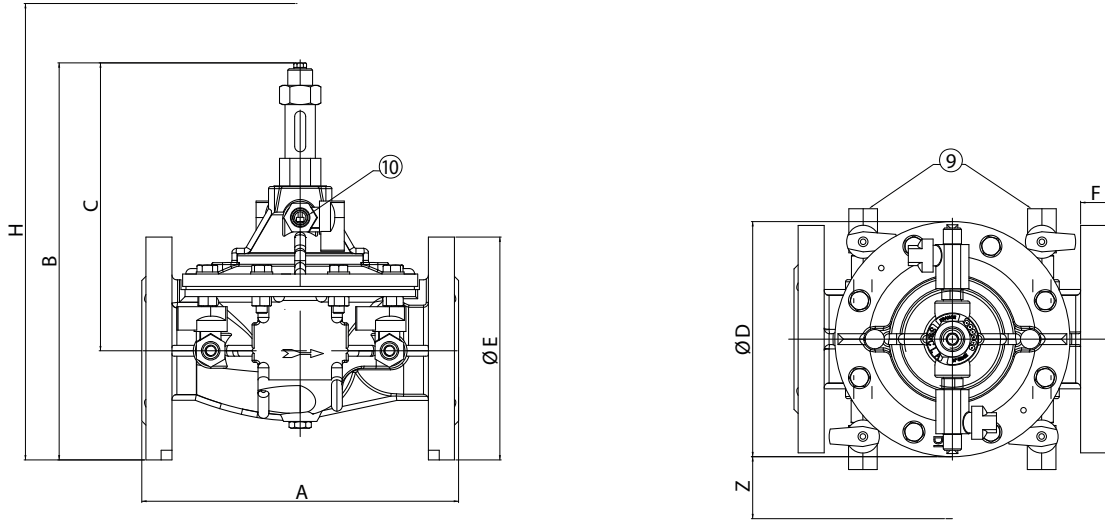
| DN     | Mini   | Maxi    | KV      |       | ζ     |
|--------|--------|---------|---------|-------|-------|
|        |        |         | m³/h    | L/s   |       |
| 1" 1/2 | 0,520  | 20,34   | 26,35   | 7,32  | 5,78  |
| 40     | 0,675  | 32,00   | 45,66   | 12,68 | 1,93  |
| 50     | 0,675  | 32,00   | 45,66   | 12,68 | 4,70  |
| 65     | 0,855  | 54,00   | 57,75   | 16,08 | 8,39  |
| 80     | 1,600  | 82,00   | 80,00   | 22,22 | 10,00 |
| 100    | 2,720  | 127,00  | 136,00  | 37,78 | 8,47  |
| 125    | 4,400  | 199,00  | 220,00  | 61,11 | 7,90  |
| 150    | 5,280  | 286,00  | 264,00  | 73,33 | 11,38 |
| 200    | 13,500 | 509,00  | 600,00  | 66,67 | 6,96  |
| 250    | 25,000 | 795,00  | 900,00  | 50,00 | 7,56  |
| 300    | 40,900 | 1145,00 | 1224,00 | 40,00 | 8,47  |

## Headloss chart

Solid line: Base valve completely open



# Sizing



standard flow valve

| DN         | A   | B   | C   | Ø D | Ø E                   | F  | H    | Z   | 9   | 10  |
|------------|-----|-----|-----|-----|-----------------------|----|------|-----|-----|-----|
| "          | mm  | mm  | mm  | mm  | mm                    | mm | mm   | mm  | "   | "   |
| 1 1/2(F/F) | 230 | 267 | 210 | 170 | 6 pans <sup>(1)</sup> | -  | 400  | 254 | 1/4 | 3/8 |
| 40         | 230 | 285 | 210 | 170 | 152                   | 23 | 400  | 254 | 1/4 | 3/8 |
| 50         | 230 | 285 | 210 | 170 | 161                   | 23 | 400  | 254 | 1/4 | 3/8 |
| 65         | 290 | 352 | 257 | 200 | 185                   | 24 | 470  | 254 | 3/8 | 1/4 |
| 80         | 310 | 372 | 272 | 217 | 200                   | 26 | 500  | 254 | 3/8 | 3/8 |
| 100        | 350 | 423 | 302 | 241 | 235                   | 28 | 510  | 254 | 3/8 | 3/8 |
| 125        | 400 | 506 | 371 | 296 | 270                   | 30 | 570  | 254 | 3/8 | 3/8 |
| 150        | 480 | 551 | 401 | 363 | 300                   | 20 | 650  | 254 | 3/8 | 3/8 |
| 200        | 600 | 709 | 529 | 467 | 360                   | 22 | 750  | 254 | 3/8 | 3/8 |
| 250        | 730 | 844 | 631 | 587 | 425                   | 24 | 900  | 254 | 1/2 | 1/2 |
| 300        | 850 | 975 | 730 | 680 | 486                   | 27 | 1100 | 254 | 1/2 | 1/2 |

(1) 78/plats

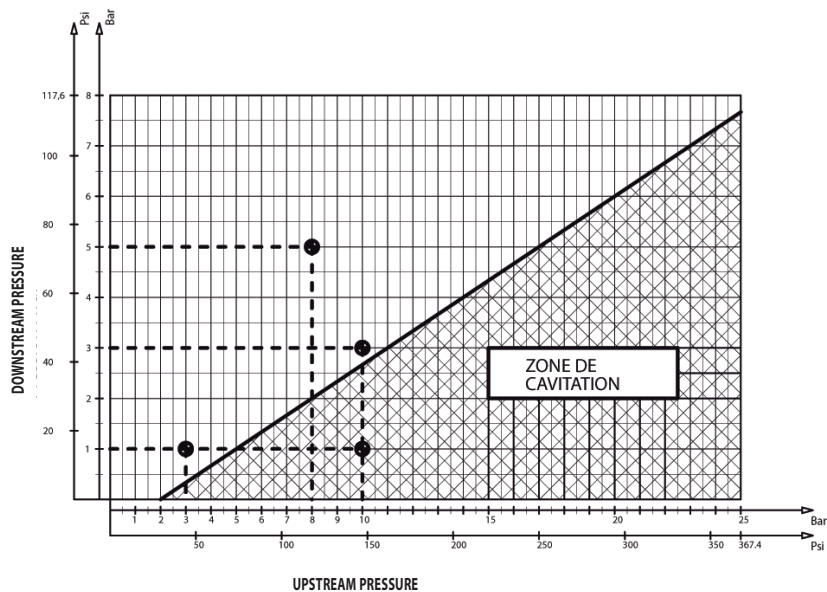
## Other operating characteristics

### Cavitation

A too large differential pressure and a low downstream pressure may result in damage to the valve by cavitation.

To avoid it, refer to the cavitation curve and if needed, reduce the differential pressure by installing and connecting two or more control valves in same line (consult us).

Stainless steel seat and counter seat are standard.



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