# Control Valves Series VL10

#### DESCRIPTION

The VL10 single seated control valves are equipped of two-way body with in-line straight connections. The VL10 valves has been designed to assure an accurate control in any process condition. Their wide application ranges allows to use the VL10 with the most common process fluids such as water, superheated water, steam, air gas and other fluids.

### DESIGN FEATURES

From DN15 to DN100 Tight shutoff : leakage Class VI

CEI EN 60534-6-1 clamp Std (ex.IEC534

#### V-Ring double packing

#### **STD BODY & TRIM MATERIALS COMBINATION**

Valve Body :

Spheroidal graphite cast iron: EN-GJS-400-18 (EN-JS1025) Bonnet: ASTM A105

#### Trim: ASTM A213 Type 304

#### PARTS

#### 1- Body Valve

- 3- Soft Seal Plug
- 2- Seat Ring
- 4- Bonnet

#### 5- Packing

| VALVE BODY CHARACTERISTICS |                                       |  |  |  |
|----------------------------|---------------------------------------|--|--|--|
| Style                      | Top Entry, single seated, globe valve |  |  |  |
| SIZES                      | from DN15 to DN100                    |  |  |  |
| PRESSURE RATING            | PN16                                  |  |  |  |
| BODY FACE TO FACE          | In accordance with EN 558-1           |  |  |  |
| DIMENSIONS                 |                                       |  |  |  |
| FLANGES CONNECTIONS        | EN 1092-2                             |  |  |  |

#### STD. ANTICORROSIVE TREATMENTS

|            | <ul> <li>Manganese Phosphating</li> </ul>             |
|------------|---|
|            | ASTM F1137  |
| Valve Body | <ul> <li>Fund bicomponent anticorrosive</li> </ul>    |
|            | acrylic at high resistance                            |
|            | <ul> <li>Finish with bicomponent aliphatic</li> </ul> |
|            | acrylic enamel RAL 7021                               |
| Bonnet     | <ul> <li>Electrolytic zinc coatings</li> </ul>        |
|            | Fe/Zn 8 c1A UNI ISO 4520                              |





#### **Temperature Application Limits** -10÷350°C



#### PACKING HT200 for temp. $\leq 200^{\circ}C$ PLUG CHARACTERISTICS 100 90 T200 PACKING 80 70 60 50 40 30 CV in % 20 10 EQP 0 ò 10 20 30 40 50 60 70 80 90 100 % Plug Stroke

#### Equal Percentage Flow Characteristic (EQP)

In equal percentage flow characteristic, equal increments of valve travel produce equal percentage changes in the existing flow. A valve with an inherent equal percentage flow characteristic provides precise throtting control through the lower portion of the travel range and rapidly increasing capacity as the valve plug nears the wide open position. Valves with equal percentage flow characteristics are used on pressure control applications, on applications where a large percentage of the pressure drop is normally absorbed by the system itself with only a relatively small percentage available at the control valve, and on applications where highly varying pressure drop conditions can be expected.

| TRIMS     |                                   |
|-----------|-----------------------------------|
| SEAL      | PTFE soft seal ≤190°C - Class VI° |
| PLUG TYPE | Parabolic Equal Perc. (EQP)       |
| PORT      | Full Port                         |



#### Stroke (mm) DN 15 DN 20 DN 25 DN 32 **DN 40 DN 50** DN 65 **DN 80 DN 100** 20 20 20 20 20 20 30 30 30

#### **FLOW RATE COEFFICIENTS** (CV= flowrate in USGPM with 1 psi of differential Pressure)

(Kv= flowrate in m<sup>3</sup>/h with 1 bar of differential Pressure)

| CV  | K.    | DIAMETRO NOMINALE - SIZES |       |       |       |       |       |       |       |        |
|-----|-------|---------------------------|-------|-------|-------|-------|-------|-------|-------|--------|
| CV  |       | DN 15                     | DN 20 | DN 25 | DN 32 | DN 40 | DN 50 | DN 65 | DN 80 | DN 100 |
| 4.5 | 3.8   | std                       |       |       |       |       |       |       |       |        |
| 6   | 5.1   |                           | std   |       |       |       |       |       |       |        |
| 11  | 9.4   |                           |       | std   |       |       |       |       |       |        |
| 18  | 15.4  |                           |       |       | std   |       |       |       |       |        |
| 27  | 22.2  |                           |       |       |       | std   |       |       |       |        |
| 47  | 40.1  |                           |       |       |       |       | std   |       |       |        |
| 73  | 63.4  |                           |       |       |       |       |       | std   |       |        |
| 105 | 89.7  |                           |       |       |       |       |       |       | std   |        |
| 160 | 136.7 |                           |       |       |       |       |       |       |       | std    |

#### CONTROL PNEUMATIC ACTUATOR

MAXIMUM ADMISSIBLE PRESSURE DROPS IN BAR (Fluid Open)

| The<br>pressur<br>drop va | e<br>GNAL<br>Iues (psi) | DN15 | DN20 | DN25 | DN32 | DN40 | DN50 | DN65 | DN80 | DN100 |
|---------------------------|-------------------------|------|------|------|------|------|------|------|------|-------|
|                           | 3÷15                    | 21   | 18   | 12   | 8    | 4    | 3    | -    | -    | -     |
| ន                         | 6÷18                    | 26   | 22   | 17   | 10   | 5    | 4    | -    | -    | -     |
| AL                        | 6÷30                    | 60   | 28   | 25   | 15   | 8    | 6    | -    | -    | -     |
|                           | 15÷60                   | 80   | 60   | 56   | 33   | 17   | 12   | -    | -    | -     |
|                           | 3÷15                    | 35   | 30   | 26   | 15   | 9    | 6    | -    | -    | -     |
| 58                        | 6÷18                    | 45   | 40   | 30   | 19   | 12   | 8    | -    | -    | -     |
| AL                        | 6÷30                    | 60   | 55   | 47   | 26   | 16   | 12   | -    | -    | -     |
|                           | 15÷60                   | 99   | 90   | 75   | 56   | 38   | 23   | -    | -    | -     |
|                           | 3÷15                    | 65   | 65   | 55   | 23   | 18   | 16   | 4    | 3    | 1     |
| AL36                      | 6÷18                    | 85   | 85   | 65   | 35   | 18   | 15   | 7    | 5    | 3     |
| NL34 /                    | 6÷30                    | 99   | 99   | 85   | 45   | 25   | 16   | 8    | 6    | 3     |
|                           | 15÷60                   | -    | -    | -    | 65   | 45   | 29   | 13   | 11   | 6     |
|                           | 3÷15                    | -    |      | -    | -    | 40   | 26   | 8    | 6    | 4     |
| AL44                      | 6÷18                    | -    | -    | -    | -    | 45   | 28   | 10   | 8    | 5     |
| AL43 /                    | 6÷30                    | -    | -    | -    | -    | 45   | 28   | 12   | 10   | 6     |
| 1                         | 15÷60                   | -    | -    | -    | -    | 85   | 70   | 37   | 27   | 17    |

#### cl.VI

Soft seal- Class VI° - CEI EN 60534-4

The pressure drop values must be used within the body rating limit

| TYPE                     | diaphragm type - multispring |                |  |  |
|--------------------------|------------------------------|----------------|--|--|
|                          | 3÷15 psi                     |                |  |  |
| CONTROL SIGNAL           | 6÷18 psi                     | 15÷60 psi      |  |  |
|                          | 6÷30 psi                     |                |  |  |
| MAX AIR SUPPLY PRESSURE  | 50 psi (3,5 bar)             | 87 psi (6 bar) |  |  |
| AMBIENT TEMPERATURE      | -20÷70°C                     |                |  |  |
|                          | Carbon Steel Fe410.1         |                |  |  |
| ACTUATOR CASING MATERIAL | Finish powder coat polyesrer |                |  |  |
|                          | RAL 7032                     |                |  |  |
| DIAPHRAGM MATERIAL       | NBR70                        |                |  |  |
|                          | Pillar Type in               |                |  |  |
|                          | Carbon Steel and Ductil Iron |                |  |  |
| PNEUMATIC CONNECTIONS    | 1/4"NPT-F                    |                |  |  |



DIRECT ACTION : Air to Close (Fig.1) REVERSE ACTION : Air to Open (Fig.2)

## ACCESSORIES

| DIMENSIONS                  |                           |
|-----------------------------|---------------------------|
| I/P Converter               | Lock-Up pneumatic device  |
| SMART positioner            | Solenoid valves           |
| Pneumatic positioner        | Top mounted handwheel     |
| Elettropneumatic positioner | Air filter regulator      |
| Alarm contacts              | 4-20 mA Position feedback |

| DN     | A (mm) | B (mm) | Nr. Holes | C (mm) |
|--------|--------|--------|-----------|--------|
| DN 15  | 130    | 47,5   | 4         | 126    |
| DN 20  | 150    | 52,5   | 4         | 126    |
| DN 25  | 160    | 57,5   | 4         | 129    |
| DN 32  | 180    | 70     | 4         | 129    |
| DN 40  | 200    | 75     | 4         | 128    |
| DN 50  | 230    | 82,5   | 4         | 128    |
| DN 65  | 290    | 92,5   | 4         | 165    |
| DN 80  | 310    | 100    | 8         | 187    |
| DN 100 | 350    | 110    | 8         | 184    |

| ACTUATOR (mm) |     |     |     |  |  |
|---------------|-----|-----|-----|--|--|
| TYPE          | ØD  | E   | F   |  |  |
| AL23          | 230 | 245 | 110 |  |  |
| AL28          | 275 | 253 | 110 |  |  |
| AL34 / AL35   | 335 | 276 | 150 |  |  |
| AL43 / AL44   | 430 | 303 | 300 |  |  |

