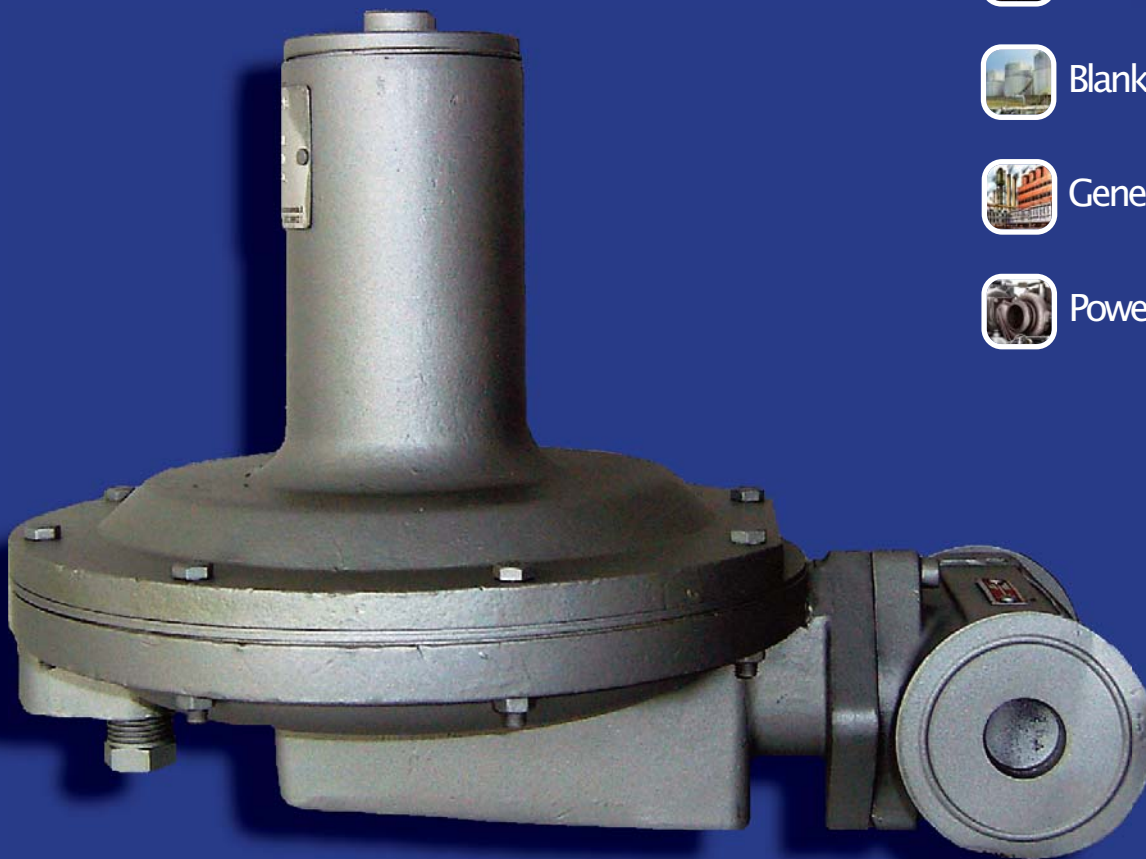


# UBB Series

Direct operated pressure reducing / relief valve



### Suitable for:



Air & process gases

### Markets:



Oil & gas



Blanketing systems



General industry

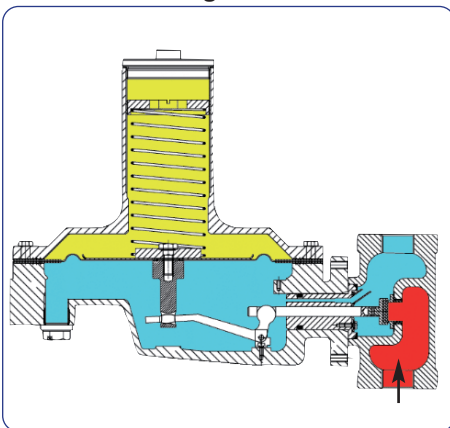


Power

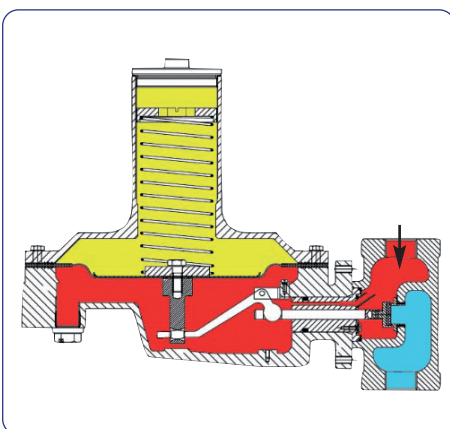
**Valve ID card**

**Function**  
Reducing and relief  
**Seat type**  
Single  
**Inlet / Outlet diameters**  
From ½" up to 1½"  
**Body material**  
Carbon steel, Stainless steel  
**End connections**  
Threaded (F-NPT or GAS/BS)  
**Max rating**  
ANSI 150  
**CV**  
From 0,04 up to 4,95  
**Trim materials**  
Stainless steel (std.)  
**Diaphragms**  
NBR

**Pressure reducing**



**Pressure relief**



- Inlet pressure
- Outlet pressure
- Atmospheric pressure

**UBB Series:**

The UBB series have the possibility to accomplish two different kind of functions: they can work as spring loaded, direct-operated pressure reducing regulators or relief valves. This valve provides pressure reducing and backpressure control in a wide variety of industrial applications dealing with all kind of process gases (including air). The large diaphragm area provides more accurate control at low pressure settings and the lever design provides very good shut-off tightness. These regulators are available in ½ up to 1½ (DN15 through DN40) inches body sizes. The simple construction makes it a very flexible and price-competitive item, easy to install and to maintain.

**General features:**

- Flow to open or close design (depending from function)
- Internal pressure sensing
- Resilient single seat
- Elastomeric Diaphragm
- Possibility to turn the body in different position simplifying the installation
- According to lever position the regulator can act as reducing or relief regulator

**Index of tables and specifications**

- Fluid applications** • see table 1
- Capacities and Cv** • see tables 2 - 5
- Materials of Construction** • see table 6
- Maximum Inlet Pressure** • see table 7
- Temperature Range** • see table 8
- Spring Range** • see table 9
- Body Sizes and End Connections** • see table 10
- Weight** • 13,5 kg (30 lbs)

Tab. [1] - Fluid applications

|     |                                                                                                                            |
|-----|----------------------------------------------------------------------------------------------------------------------------|
| Gas | Air, inert gas, CO <sub>2</sub> , CO, hydrocarbons, O <sub>2</sub> , H <sub>2</sub> , F, NH <sub>3</sub> , frigorific gas. |
|-----|----------------------------------------------------------------------------------------------------------------------------|

Tab. [2] - Cv values for all body sizes in reducing service

| NOZZLE | Body size |      |      |      |
|--------|-----------|------|------|------|
|        | ½"        | ¾"   | 1"   | 1½"  |
| 1      | 0,04      | 0,04 | 0,04 | 0,04 |
| 2      | 0,10      | 0,10 | 0,10 | 0,10 |
| 3      | 0,34      | 0,34 | 0,34 | 0,34 |
| 4      | 0,75      | 0,75 | 0,75 | 0,75 |
| 5      | 0,94      | 0,94 | 0,94 | 0,94 |
| 6      | 1,38      | 1,38 | 1,38 | 1,38 |
| 7      | 1,90      | 1,90 | 1,90 | 1,90 |
| 8      | 2,45      | 2,45 | 2,45 | 2,45 |
| 9      | 2,80      | 2,80 | 2,80 | 2,80 |
| 10     | 3,14      | 3,14 | 3,14 | 3,14 |
| 11     | 3,55      | 3,55 | 3,55 | 3,55 |
| 12     | 3,82      | 3,82 | 3,82 | 3,82 |
| 13     |           | 4,00 | 4,00 | 4,00 |
| 14     |           | 4,50 | 4,50 | 4,50 |
| 15     |           | 4,95 | 4,90 | 4,90 |

 standard nozzles

Tab. [3] - Cv values for all body sizes in relief service

| NOZZLE | Body size |      |      |      |
|--------|-----------|------|------|------|
|        | ½"        | ¾"   | 1"   | 1½"  |
| 1      | 0,04      | 0,04 | 0,04 | 0,04 |
| 2      | 0,17      | 0,17 | 0,17 | 0,17 |
| 3      | 0,38      | 0,38 | 0,38 | 0,38 |
| 4      | 0,75      | 0,75 | 0,75 | 0,75 |
| 5      | 0,95      | 0,95 | 0,95 | 0,95 |
| 6      | 1,39      | 1,39 | 1,39 | 1,39 |
| 7      | 1,88      | 1,88 | 1,88 | 1,88 |
| 8      | 2,50      | 2,50 | 2,50 | 2,50 |
| 9      | 2,96      | 2,96 | 2,96 | 2,96 |
| 10     | 3,40      | 3,40 | 3,40 | 3,40 |
| 11     | 3,75      | 3,75 | 3,75 | 3,75 |
| 12     | 3,95      | 3,95 | 3,95 | 3,95 |
| 13     |           | 4,15 | 4,15 | 4,15 |
| 14     |           | 4,40 | 4,40 | 4,40 |
| 15     |           | 4,86 | 4,90 | 4,90 |

 standard nozzles

Tab. [4] - Capacities for DN 15, DN 20, DN 25, DN 40 | Reducing service

| Capacities for DN15-DN20-DN25-DN40                    |                            |                            |                                    |                                                |                 |                  |                  |                  |                  |
|-------------------------------------------------------|----------------------------|----------------------------|------------------------------------|------------------------------------------------|-----------------|------------------|------------------|------------------|------------------|
| OUTLET PRESSURE RANGE, SPRING CODE                    | OFFSET FROM SETPOINT       | OUTLET PRESSURE SETTING    | MAXIMUM INLET PRESSURE barg (PSIG) | CAPACITIES IN Nm <sup>3</sup> /h (SCFH) OF AIR |                 |                  |                  |                  |                  |
|                                                       |                            |                            |                                    | Orifice Size, (mm)                             |                 |                  |                  |                  |                  |
|                                                       |                            |                            |                                    | 1                                              | 2               | 4                | 8                | 14               |                  |
| 3,4 to 5,5 mbar (1,4 to 2,2 inches w.c.), 43 12 UBB02 | 1 mbar (0,4 inches w.c.)   | 3,4 mbar (1,4 inches w.c.) | 0,11 (1,6)                         | 0,265 (9,89)                                   | 0,719 (26,85)   | 5,711 (213,15)   | 18,655 (696,30)  | 34,264 (1278,92) |                  |
|                                                       |                            |                            | 0,30 (4,35)                        | 0,508 (18,96)                                  | 1,284 (47,92)   | 9,630 (359,43)   | 31,457 (1174,15) |                  |                  |
|                                                       |                            |                            | 1,30 (18,85)                       | 1,173 (43,77)                                  | 2,931 (109,42)  | 21,986 (820,63)  |                  |                  |                  |
|                                                       |                            |                            | 5,60 (81,22)                       | 3,756 (140,20)                                 | 9,390 (350,50)  |                  |                  |                  |                  |
|                                                       | 5,5 mbar (2,2 inches w.c.) | 10,00 (145)                | 6,500 (242,60)                     |                                                |                 |                  |                  |                  |                  |
|                                                       |                            |                            |                                    | 0,11 (1,6)                                     | 0,262 (9,78)    | 0,711 (26,55)    | 5,659 (211,24)   | 18,487 (690,051) | 33,957 (1267,44) |
|                                                       |                            |                            |                                    | 0,30 (4,35)                                    | 0,506 (18,89)   | 1,281 (47,80)    | 9,604 (358,46)   | 31,372 (1170,98) |                  |
|                                                       |                            |                            |                                    | 1,30 (18,85)                                   | 1,172 (43,76)   | 2,931 (109,42)   | 21,981 (820,44)  |                  |                  |
| 5,5 to 9,3 mbar (2,2 to 3,7 inches w.c.), 43 12 UBB03 | 2 mbar (0,8 inches w.c.)   | 5,5 mbar (2,2 inches w.c.) | 0,13 (1,88)                        | 0,292 (10,91)                                  | 0,792 (29,56)   | 6,183 (230,78)   | 20,198 (753,89)  | 37,098 (1384,69) |                  |
|                                                       |                            |                            | 0,40 (5,80)                        | 0,597 (22,29)                                  | 1,493 (55,71)   | 11,195 (417,86)  | 36,570 (1365,00) |                  |                  |
|                                                       |                            |                            | 1,60 (23,2)                        | 1,338 (49,94)                                  | 3,345 (124,85)  | 25,091 (936,53)  |                  |                  |                  |
|                                                       |                            |                            | 6,50 (94,27)                       | 4,316 (161,09)                                 | 10,790 (402,72) |                  |                  |                  |                  |
|                                                       | 9,3 mbar (3,7 inches w.c.) | 10,00 (145)                | 6,499 (242,58)                     |                                                |                 |                  |                  |                  |                  |
|                                                       |                            |                            |                                    | 0,13 (1,88)                                    | 0,287 (10,72)   | 0,779 (29,06)    | 6,098 (227,61)   | 19,920 (743,53)  | 36,588 (1365,66) |
|                                                       |                            |                            |                                    | 0,40 (5,80)                                    | 0,595 (22,21)   | 1,488 (55,53)    | 11,157 (416,45)  | 36,447 (1360,41) |                  |
|                                                       |                            |                            |                                    | 1,60 (23,2)                                    | 1,338 (49,94)   | 3,345 (124,85)   | 25,086 (936,33)  |                  |                  |
| 9,3 to 22 mbar (3,7 to 8,8 inches w.c.), 43 12 UBB05  | 5 mbar (2 inches w.c.)     | 9,3 mbar (3,7 inches w.c.) | 0,21 (3,05)                        | 0,396 (14,77)                                  | 1,053 (39,30)   | 7,896 (294,73)   | 25,794 (962,77)  | 47,377 (1768,36) |                  |
|                                                       |                            |                            | 0,60 (8,70)                        | 0,744 (27,75)                                  | 1,859 (69,38)   | 13,941 (520,35)  | 45,540 (1699,81) |                  |                  |
|                                                       |                            |                            | 2,60 (37,71)                       | 1,885 (70,35)                                  | 4,712 (175,87)  | 35,338 (1319,02) |                  |                  |                  |
|                                                       |                            |                            | 10,00 (145)                        | 6,498 (242,53)                                 | 16,244 (606,33) |                  |                  |                  |                  |
|                                                       | 22 mbar (8,8 inches w.c.)  | 10,00 (145)                | 6,494 (242,38)                     |                                                |                 |                  |                  |                  |                  |
|                                                       |                            |                            |                                    | 0,21 (3,05)                                    | 0,382 (14,26)   | 1,024 (38,24)    | 7,683 (286,78)   | 25,098 (936,80)  | 46,099 (1720,66) |
|                                                       |                            |                            |                                    | 0,60 (8,70)                                    | 0,739 (27,58)   | 1,847 (68,94)    | 13,853 (517,06)  | 45,252 (1689,05) |                  |
|                                                       |                            |                            |                                    | 2,60 (37,71)                                   | 1,880 (70,18)   | 4,700 (175,44)   | 35,252 (1315,78) |                  |                  |
| 22 to 34 mbar (8,8 to 13,6 inches w.c.), 43 12 UBB06  | 8 mbar (3,15 inches w.c.)  | 22 mbar (8,8 inches w.c.)  | 0,25 (3,63)                        | 0,432 (16,13)                                  | 1,131 (42,20)   | 8,480 (316,54)   | 27,703 (1034,02) | 50,883 (1899,21) |                  |
|                                                       |                            |                            | 0,80 (11,60)                       | 0,872 (32,55)                                  | 2,180 (81,38)   | 16,352 (610,33)  | 53,415 (1993,73) |                  |                  |
|                                                       |                            |                            | 3,20 (46,41)                       | 2,255 (84,17)                                  | 5,638 (210,43)  | 42,284 (1578,26) |                  |                  |                  |
|                                                       |                            |                            | 10,00 (145)                        | 6,494 (242,38)                                 | 16,234 (605,94) |                  |                  |                  |                  |
|                                                       | 34 mbar (13,6 inches w.c.) | 10,00 (145)                | 6,490 (242,23)                     |                                                |                 |                  |                  |                  |                  |
|                                                       |                            |                            |                                    | 0,25 (3,63)                                    | 0,420 (15,68)   | 1,106 (41,28)    | 8,295 (309,62)   | 27,097 (1011,41) | 49,770 (1857,69) |
|                                                       |                            |                            |                                    | 0,80 (11,60)                                   | 0,869 (32,43)   | 2,172 (81,07)    | 16,289 (608,00)  | 53,211 (1986,11) |                  |
|                                                       |                            |                            |                                    | 3,20 (46,41)                                   | 2,251 (84,01)   | 5,627 (210,04)   | 42,204 (1575,28) |                  |                  |
| 34 to 62 mbar (13,6 to 25 inches w.c.), 43 12 UBB07   | 17 mbar (6,8 inches w.c.)  | 34 mbar (13,6 inches w.c.) | 0,30 (4,35)                        | 0,480 (17,93)                                  | 1,231 (45,95)   | 9,233 (344,61)   | 30,160 (1125,74) | 55,396 (2067,68) |                  |
|                                                       |                            |                            | 0,90 (13,05)                       | 0,932 (34,78)                                  | 2,330 (86,96)   | 17,474 (652,21)  | 57,080 (2130,54) |                  |                  |
|                                                       |                            |                            | 3,70 (53,66)                       | 2,563 (95,66)                                  | 6,407 (239,14)  | 48,052 (1793,56) |                  |                  |                  |
|                                                       |                            |                            | 10,00 (145)                        | 6,490 (242,23)                                 | 16,224 (605,58) |                  |                  |                  |                  |
|                                                       | 62 mbar (25 inches w.c.)   | 10,00 (145)                | 6,481 (241,89)                     |                                                |                 |                  |                  |                  |                  |
|                                                       |                            |                            |                                    | 0,30 (4,35)                                    | 0,453 (16,92)   | 1,177 (43,95)    | 8,831 (329,63)   | 28,849 (1076,78) | 52,987 (1977,77) |
|                                                       |                            |                            |                                    | 0,90 (13,05)                                   | 0,925 (34,52)   | 2,312 (86,30)    | 17,341 (647,26)  | 56,647 (2114,38) |                  |
|                                                       |                            |                            |                                    | 3,70 (53,66)                                   | 2,553 (95,29)   | 6,382 (238,23)   | 47,868 (1786,69) |                  |                  |
| 10,00 (145)                                           | 6,481 (241,89)             | 16,202 (604,73)            |                                    |                                                |                 |                  |                  |                  |                  |

|                                                         |                                |                             |              |                |                 |                   |                   |                   |  |
|---------------------------------------------------------|--------------------------------|-----------------------------|--------------|----------------|-----------------|-------------------|-------------------|-------------------|--|
| 62 to 98 mbar<br>(25 to 39 inches w.c.),<br>43 12 UBB08 | 26 mbar<br>(10,24 inches w.c.) | 62 mbar<br>(25 inches w.c.) | 0,50 (7,25)  | 0,647 (24,16)  | 1,618 (60,41)   | 12,139 (453,08)   | 39,652 (1480,04)  | 72,831 (2718,45)  |  |
|                                                         |                                |                             | 1,50 (21,76) | 1,278 (47,69)  | 3,194 (119,23)  | 23,958 (894,23)   | 78,262 (2921,16)  |                   |  |
|                                                         |                                |                             | 6,30 (91,37) | 4,172 (155,74) | 10,431 (389,34) | 78,233 (2920,07)  |                   |                   |  |
|                                                         |                                | 98 mbar<br>(39 inches w.c.) | 0,50 (7,25)  | 0,628 (23,45)  | 1,571 (58,63)   | 11,782 (439,75)   | 38,486 (1436,51)  | 70,689 (2638,49)  |  |
|                                                         |                                |                             | 1,50 (21,76) | 1,273 (47,53)  | 3,184 (118,83)  | 23,877 (891,21)   | 77,998 (2911,29)  |                   |  |
|                                                         |                                |                             | 6,30 (91,37) | 4,160 (155,29) | 10,401 (388,22) | 78,006 (2911,63)  |                   |                   |  |
| 98 to 190 mbar<br>(1,4 to 2,8 psig),<br>43 12 UBB09     | 50 mbar<br>(0,73 psig)         | 98 mbar<br>(1,4 psig)       | 0,80 (11,60) | 0,849 (31,69)  | 2,123 (79,23)   | 15,921 (594,26)   | 52,008 (1941,23)  | 95,525 (3565,52)  |  |
|                                                         |                                |                             | 2,50 (36,26) | 1,813 (67,68)  | 4,533 (169,19)  | 33,996 (1268,91)  | 111,053 (4145,11) |                   |  |
|                                                         |                                |                             | 10,00 (145)  | 6,469 (241,45) | 16,172 (603,63) | 121,291 (4527,24) |                   |                   |  |
|                                                         |                                | 190 mbar<br>(2,8 psig)      | 0,80 (11,60) | 0,815 (30,42)  | 2,037 (76,04)   | 15,280 (570,32)   | 49,913 (1863,02)  | 91,677 (3421,88)  |  |
|                                                         |                                |                             | 2,50 (36,26) | 1,811 (67,59)  | 4,527 (168,96)  | 33,951 (1267,23)  | 110,906 (4139,62) |                   |  |
|                                                         |                                |                             | 10,00 (145)  | 6,439 (240,33) | 16,097 (600,82) | 120,726 (4506,16) |                   |                   |  |
| 190 to 300 mbar<br>(2,8 to 4,4 psig),<br>43 12 UBB10    | 77mbar<br>(1,12 psig)          | 190 mbar<br>(2.8 psig)      | 0,80 (11,60) | 0,815 (30,42)  | 2,037 (76,04)   | 15,280 (570,32)   | 49,913 (1863,02)  | 91,677 (3421,88)  |  |
|                                                         |                                |                             | 2,70 (39,16) | 1,916 (71,53)  | 4,791 (178,82)  | 35,931 (1341,15)  | 117,375 (4381,08) |                   |  |
|                                                         |                                |                             | 10,00 (145)  | 6,439 (240,33) | 16,097 (600,82) | 120,726 (4506,16) |                   |                   |  |
|                                                         |                                | 300 mbar<br>(4,4 psig)      | 0,80 (11,60) | 0,763 (28,48)  | 1,908 (71,21)   | 14,308 (534,05)   | 46,740 (1744,57)  | 85,848 (3204,32)  |  |
|                                                         |                                |                             | 2,70 (39,16) | 1,913 (71,39)  | 4,781 (178,47)  | 35,861 (1338,53)  | 117,146 (4372,53) |                   |  |
|                                                         |                                |                             | 10,00 (145)  | 6,403 (238,98) | 16,006 (597,44) | 120,047 (4480,81) |                   |                   |  |
| 300 to 610 mbar<br>(4,4 to 8,8 psig),<br>43 12 UBB12    | 180mbar<br>(2,7 psig)          | 300 mbar<br>(4,4 psig)      | 1,60 (23,2)  | 1,300 (48,50)  | 3,248 (121,24)  | 24,362 (909,32)   | 79,582 (2970,43)  | 146,171 (5455,90) |  |
|                                                         |                                |                             | 5,00 (72,52) | 3,281 (122,46) | 8,202 (306,15)  | 61,516 (2296,1)   | 200,951 (7500,59) |                   |  |
|                                                         |                                |                             | 10,00 (145)  | 6,403 (238,98) | 16,006 (597,44) | 120,047 (4480,81) |                   |                   |  |
|                                                         |                                | 610 mbar<br>(8,8 psig)      | 1,60 (23,2)  | 1,217 (45,44)  | 3,044 (113,60)  | 22,827 (852,02)   | 74,567 (2783,26)  | 136,96 (5112,10)  |  |
|                                                         |                                |                             | 5,00 (72,52) | 3,171 (118,35) | 7,927 (295,88)  | 59,452 (2219,09)  | 194,211 (7249,02) |                   |  |
|                                                         |                                |                             | 10,00 (145)  | 6,300 (235,13) | 15,748 (587,82) | 118,113 (4408,62) |                   |                   |  |

## ■ UB REGULATORS

Tab. [5] - Capacities for DN 15, DN 20, DN 25, DN 40 | Relief service

| INLET PRESSURE RANGE, SPRING CODE                           | OFFSET FROM SETPOINT           | INLET PRESSURE SETTING        | CAPACITIES IN Nm <sup>3</sup> /h (SCFH) OF AIR |                  |                   |                   |                    |
|-------------------------------------------------------------|--------------------------------|-------------------------------|------------------------------------------------|------------------|-------------------|-------------------|--------------------|
|                                                             |                                |                               | Orifice Size, (mm)                             |                  |                   |                   |                    |
|                                                             |                                |                               | 1                                              | 2                | 4                 | 8                 | 14                 |
| 3,4 to 5,5 mbar<br>(1,4 to 2,2 inches w.c.),<br>43 12 UBB02 | 1 mbar<br>(0,4 inches w.c.)    | 3,4 mbar<br>(1,4 inches w.c.) | 0,031<br>(1,14)                                | 0,161<br>(6,01)  | 0,843<br>(31,48)  | 3,124<br>(116,59) | 5,718<br>(213,41)  |
|                                                             |                                | 5,5 mbar<br>(2,2 inches w.c.) | 0,042<br>(1,56)                                | 0,216<br>(8,06)  | 1,116<br>(41,66)  | 4,100<br>(153,02) | 7,479<br>(279,17)  |
| 5,5 to 9,3 mbar<br>(2,2 to 3,7 inches w.c.),<br>43 12 UBB03 | 2 mbar<br>(0,8 inches w.c.)    | 5,5 mbar<br>(2,2 inches w.c.) | 0,042<br>(1,56)                                | 0,216<br>(8,06)  | 1,116<br>(41,66)  | 4,100<br>(153,02) | 7,479<br>(279,17)  |
|                                                             |                                | 9,3 mbar<br>(3,7 inches w.c.) | 0,058<br>(2,18)                                | 0,297<br>(11,07) | 1,513<br>(56,48)  | 5,513<br>(205,77) | 9,844<br>(367,45)  |
| 9,3 to 22 mbar<br>(3,7 to 8,8 inches w.c.),<br>43 12 UBB05  | 5 mbar<br>(2 inches w.c.)      | 9,3 mbar<br>(3,7 inches w.c.) | 0,058<br>(2,18)                                | 0,297<br>(11,07) | 1,513<br>(56,48)  | 5,513<br>(205,77) | 9,844<br>(367,45)  |
|                                                             |                                | 22 mbar<br>(8,8 inches w.c.)  | 0,100<br>(3,73)                                | 0,496<br>(18,53) | 2,487<br>(92,83)  | 8,606<br>(321,22) | 15,147<br>(565,35) |
| 22 to 34 mbar<br>(8,8 to 13,6 inches w.c.),<br>43 12 UBB06  | 8 mbar<br>(3,15 inches w.c.)   | 22 mbar<br>(8,8 inches w.c.)  | 0,100<br>(3,73)                                | 0,496<br>(18,53) | 2,487<br>(92,83)  | 8,606<br>(321,22) | 15,147<br>(565,35) |
|                                                             |                                | 34 mbar<br>(13,6 inches w.c.) | 0,131<br>(4,88)                                | 0,643<br>(24,01) | 3,197<br>(119,33) | 10,703 (399,48)   | 18,837<br>(703,09) |
| 34 to 62 mbar<br>(13,6 to 25 inches w.c.),<br>43 12 UBB07   | 17 mbar<br>(6,8 inches w.c.)   | 34 mbar<br>(13,6 inches w.c.) | 0,131<br>(4,88)                                | 0,643<br>(24,01) | 3,197<br>(119,33) | 10,703 (399,48)   | 18,837<br>(703,09) |
|                                                             |                                | 62 mbar<br>(25 inches w.c.)   | 0,189<br>(7,06)                                | 0,920<br>(34,34) | 4,340<br>(161,99) | 14,467 (539,97)   | 25,461<br>(950,35) |
| 62 to 98 mbar<br>(25 to 39 inches w.c.),<br>43 12 UBB08     | 26 mbar<br>(10,24 inches w.c.) | 62 mbar<br>(25 inches w.c.)   | 0,189<br>(7,06)                                | 0,920<br>(34,34) | 4,340<br>(161,99) | 14,467 (539,97)   | 25,461(950,35)     |
|                                                             |                                | 98 mbar<br>(39 inches w.c.)   | 0,251<br>(9,37)                                | 1,211<br>(45,21) | 5,464<br>(203,96) | 18,214 (679,86)   | 32,057 (1196,55)   |
| 98 to 190 mbar<br>(1,4 to 2,8 psig),<br>43 12 UBB09         | 50mbar<br>(0,73 psig)          | 98 mbar<br>(1,4 psig)         | 0,251<br>(9,37)                                | 1,211<br>(45,21) | 5,464<br>(203,96) | 18,214 (679,86)   | 32,057 (1196,55)   |
|                                                             |                                | 190 mbar<br>(2.8 psig)        | 0,380<br>(14,19)                               | 1,733<br>(64,67) | 7,644<br>(285,31) | 25,479 (951,03)   | 44,844 (1673,81)   |
| 190 to 300 mbar<br>(2,8 to 4,4 psig),<br>43 12 UBB10        | 77mbar<br>(1,12 psig)          | 190 mbar<br>(2.8 psig)        | 0,380<br>(14,19)                               | 1,733<br>(64,67) | 7,644<br>(285,31) | 25,479 (951,03)   | 44,844 (1673,81)   |
|                                                             |                                | 300 mbar<br>(4,4 psig)        | 0,511<br>(19,07)                               | 2.192<br>(81,82) | 9,671<br>(360,99) | 32,238 (1203,30)  | 56,739 (2117,81)   |

Tab. [6] - Material combination

\* Standard construction

\*\* Special construction

| Body                  |                        |                      |
|-----------------------|------------------------|----------------------|
|                       | Carbon steel (AS2) *   | 316 SS (IS1) **      |
|                       | -18°C ≤ T ≤ 90°C       | -18°C ≤ T ≤ 90°C     |
|                       | (-0,4°F ≤ T ≤ 194°F)   | (-0,4°F ≤ T ≤ 194°F) |
| Body                  | ASME SA-216 WCC        | ASME SA-351 CF8M     |
| Studs                 | CLASS 8.8 EN 20898 - 1 | A4-70                |
| Trim                  |                        |                      |
| Seat                  | ASTM A-479 316         | ASTM A-479 316       |
| Piston stem           | ASTM A-479 316         | ASTM A-479 316       |
| Piston gasket         | NBR                    | NBR                  |
| Guide bushing         | DELFIN                 | DELFIN               |
| Actuator              |                        |                      |
| Spring casing         | ASME SA-216 WCC        | ASME SA-216 WCC      |
| Actuator lower casing | ASME SA-216 WCC        | ASME SA-351 CF8M     |
| Spring                | ASTM A-401             | ASTM A-401           |
| Diaphragm             | See Tab. [8]           |                      |

Tab. [7] - Maximum Operating Inlet Pressures for reducing service

| ORIFICE SIZE | MAXIMUM OPERATING INLET PRESSURE, barg (PSIG)                              |                                                                            |                                                                            |                                                                            |
|--------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|
|              | With 0,0034 to 0,0055 bar (0,049 to 0,080 Psig)<br>Outlet Pressure Setting | With 0,0055 to 0,0093 bar (0,080 to 0,135 Psig)<br>Outlet Pressure Setting | With 0,0093 to 0,0220 bar (0,135 to 0,319 Psig)<br>Outlet Pressure Setting | With 0,0220 to 0,0340 bar (0,319 to 0,493 Psig)<br>Outlet Pressure Setting |
| 1            | 10,00 (145,0)                                                              | 10,00 (145,0)                                                              | 10,00 (145,0)                                                              | 10,00 (145,0)                                                              |
| 2            | 5,60 (81,2)                                                                | 6,50 (94,3)                                                                | 10,00 (145,0)                                                              | 10,00 (145,0)                                                              |
| 4            | 1,30 (18,9)                                                                | 1,60 (23,2)                                                                | 2,60 (37,7)                                                                | 3,20 (46,4)                                                                |
| 8            | 0,30 (4,4)                                                                 | 0,40 (5,8)                                                                 | 0,60 (8,7)                                                                 | 0,80 (11,6)                                                                |
| 14           | 0,11 (1,6)                                                                 | 0,13 (1,9)                                                                 | 0,21 (3,1)                                                                 | 0,25 (3,6)                                                                 |

| ORIFICE SIZE | MAXIMUM OPERATING INLET PRESSURE, barg (PSIG)                            |                                                                          |                                                                          |                                                                          |                                                                          |
|--------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|
|              | With 0,034 to 0,062 bar (0,493 to 0,899 Psig)<br>Outlet Pressure Setting | With 0,062 to 0,098 bar (0,899 to 1,421 Psig)<br>Outlet Pressure Setting | With 0,098 to 0,190 bar (1,421 to 2,756 Psig)<br>Outlet Pressure Setting | With 0,190 to 0,300 bar (2,756 to 4,351 Psig)<br>Outlet Pressure Setting | With 0,300 to 0,610 bar (4,351 to 8,847 Psig)<br>Outlet Pressure Setting |
| 1            | 10,00 (145,0)                                                            | 10,00 (145,0)                                                            | 10,00 (145,0)                                                            | 10,00 (145,0)                                                            | 10,00 (145,0)                                                            |
| 2            | 10,00 (145,0)                                                            | 10,00 (145,0)                                                            | 10,00 (145,0)                                                            | 10,00 (145,0)                                                            | 10,00 (145,0)                                                            |
| 4            | 3,70 (53,7)                                                              | 6,30 (91,4)                                                              | 10,00 (145,0)                                                            | 10,00 (145,0)                                                            | 10,00 (145,0)                                                            |
| 8            | 0,90 (13,1)                                                              | 1,50 (21,8)                                                              | 2,50 (36,3)                                                              | 2,70 (39,2)                                                              | 5,00 (72,5)                                                              |
| 14           | 0,30 (4,4)                                                               | 0,50 (7,3)                                                               | 0,80 (11,6)                                                              | 0,80 (11,6)                                                              | 1,60 (23,2)                                                              |

Tab. [8] - Temperature range for Disc elastomer and Diaphragms

|     |                             |
|-----|-----------------------------|
| NBR | -18 to 90°C (-0,4 to 194°F) |
|-----|-----------------------------|

Tab. [9] - Spring range

| Spring | Spring Ranges                                |
|--------|----------------------------------------------|
| UBB02  | 3,4 to 5,5 mbar (1,4 to 2,2 inches w.c.)     |
| UBB03  | 5,5 to 9,3 mbar (2,2 to 3,7 inches w.c.)     |
| UBB05  | 9,3 to 22,0 mbar (3,7 to 8,8 inches w.c.)    |
| UBB06  | 22,0 to 34,0 mbar (8,8 to 13,6 inches w.c.)  |
| UBB07  | 34,0 to 62,0 mbar (13,6 to 25,0 inches w.c.) |
| UBB08  | 62,0 to 98,0 mbar (25,0 to 39,0 inches w.c.) |
| UBB09  | 0,098 to 0,190 bar (1,4 to 2,8 psig)         |
| UBB10  | 0,190 to 0,300 bar (2,8 to 4,4 psig)         |
| UBB12  | 0,300 to 0,610 bar (4,4 to 8,8 psig)         |

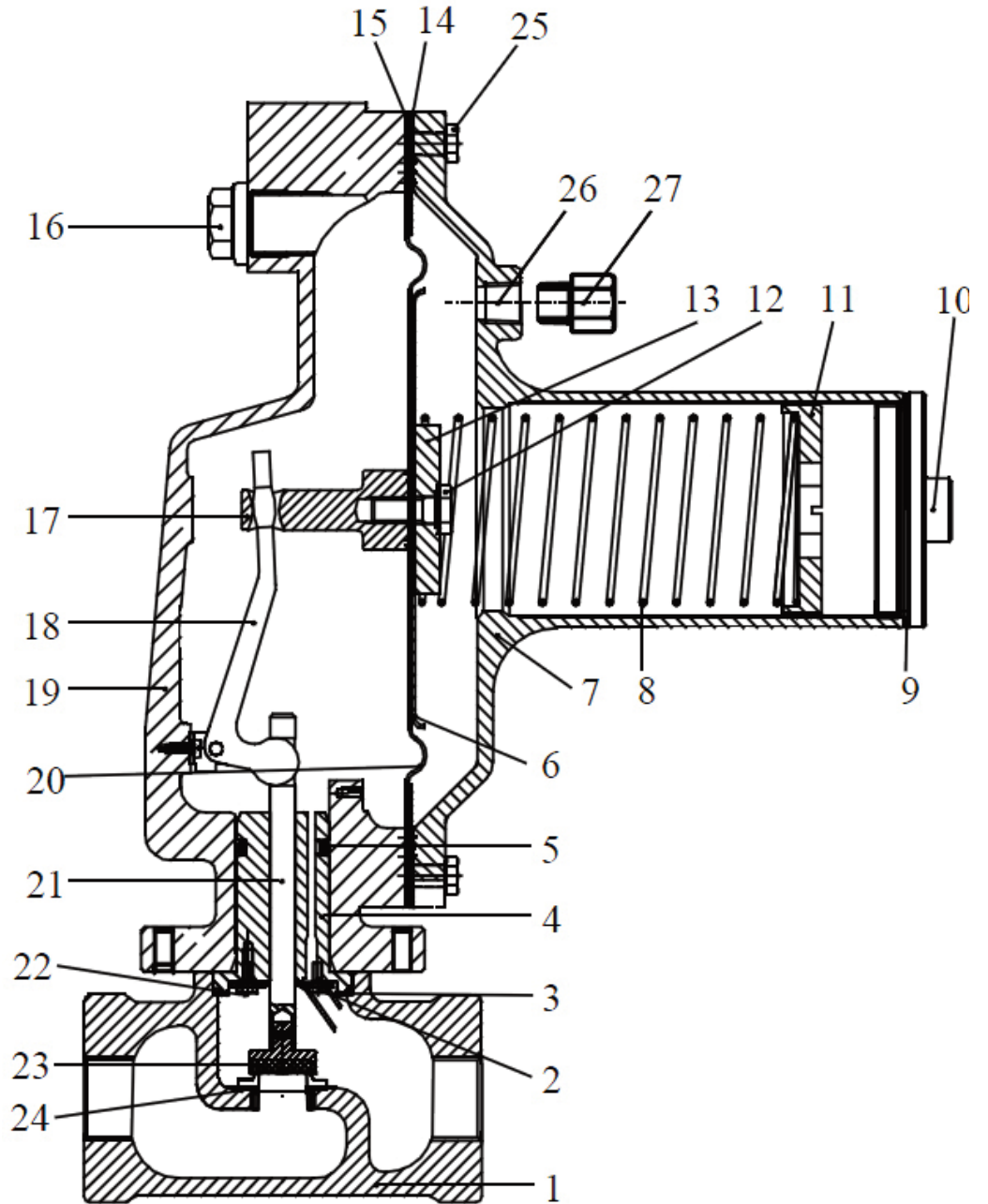
## UB REGULATORS

### Parts list:

- 1 - Body
- 2 - Screw
- 3 - Pressure sensing (\*)
- 4 - Stem guide
- 5 - O'ring
- 6 - Diaphragm plate (upper)(\*)
- 7 - Spring case
- 8 - Spring
- 9 - Gasket
- 10 - Spring case cap
- 11 - Adjusting screw ring
- 12 - Screw
- 13 - Spring button (lower)
- 14 - Gasket (\*)
- 15 - Diaphragm ring (\*)
- 16 - Screw
- 17 - Stem-diaphragm connection
- 18 - Lever
- 19 - Actuator diaphragm case
- 20 - Diaphragm (\*)
- 21 - Stem
- 22 - Gasket
- 23 - Plug
- 24 - Seat
- 25 - Screw
- 26 - Hole vent
- 27 - Plug vent

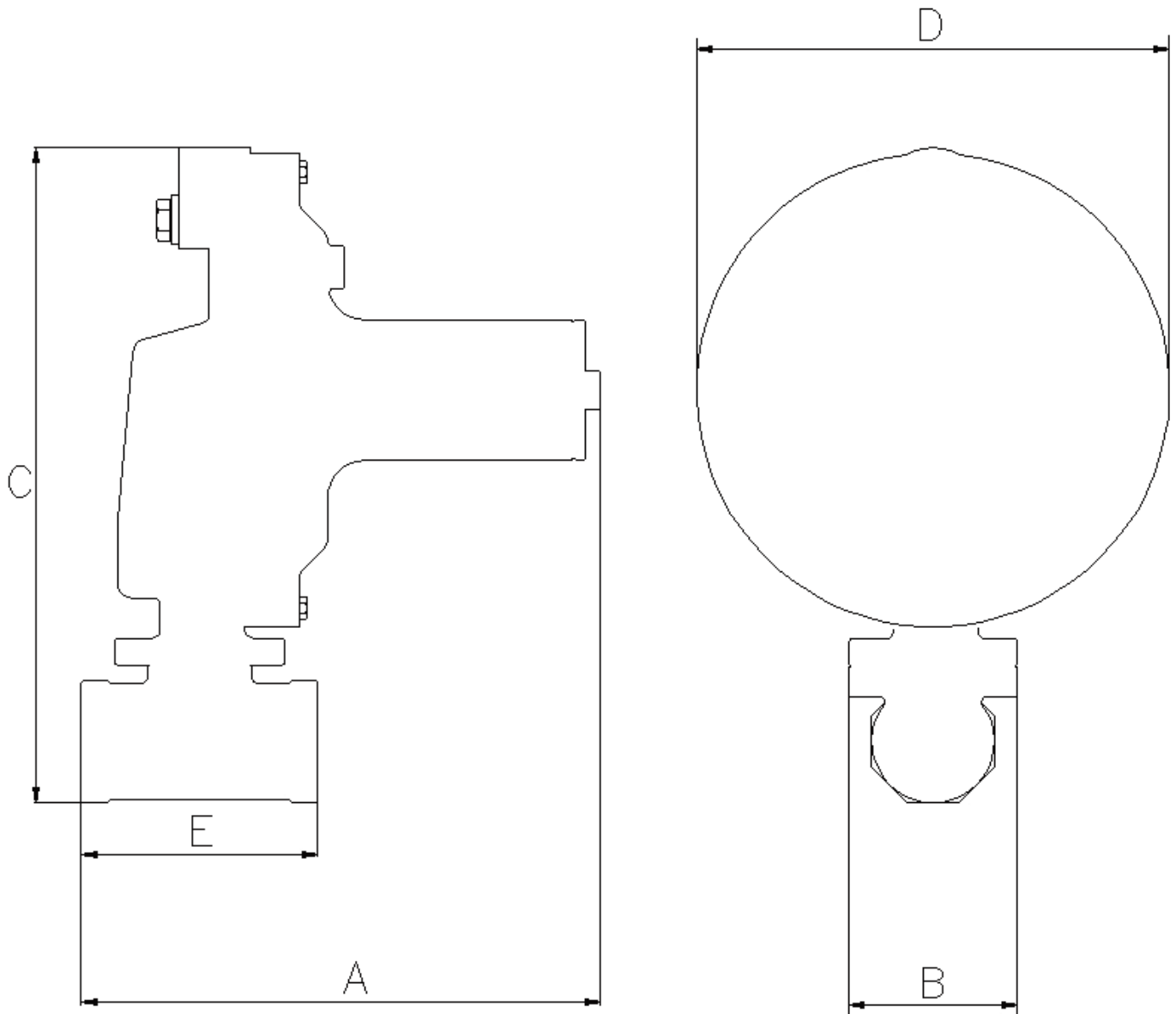
(\*) Recommended spare parts

### UBB section drawing





UBB dimensional drawing



Tab. [10] - Body size and face to face dimensions

| Size (DN)  | Threaded     |             |                 |              |             |
|------------|--------------|-------------|-----------------|--------------|-------------|
|            |              |             | NPT-F           | BSP-F        |             |
|            | A            | B           | C               | D            | E           |
| ½" (DN15)  | 305 mm (12") | 89 mm (3½") | 345,5 mm (13½") | 250 mm (10") | 122 mm (5") |
| ¾" (DN20)  |              |             |                 |              |             |
| 1" (DN25)  |              |             |                 |              |             |
| 1½" (DN40) |              |             |                 |              |             |

## About Carraro

Carraro Srl is a private independent company, operative since 1924 in the field of industrial valves. The firm produces and commercializes worldwide a broad range of industrial pressure regulators, desuperheaters and safety valves for fluids such as steam, process gases and liquids.

The flexible organization of Carraro allows a great customization of the products and the production of "taylor made" constructions. Most of the Carraro's product range can be realized also in "exotic" materials such as e.g. duplex, superduplex, monel, hastelloy, aluminum bronze and others. Supported by a global network of sales offices, representatives and distributors, Carraro offers a wide range of solutions for the Oil&Gas, the Power industry and all other diversified industrial applications.

## Carraro: product range

**UB Regulators:** direct-operated pressure regulators with compact design

**Maxomatic Series:** multifunction pilot-operated regulators for liquids

**MM-BPM series:** direct-operated, spring pressure regulators

**AT series:** direct-operated temperature regulators

**M51 series:** direct-operated, weight and lever pressure regulators

**CS series:** safety valves for vapours, gas, liquids

**CSV series:** safety valves for steam and gases

**VRE series:** electrically operated control valves

**MCP - ACP series:** pneumatically operated control valves

**AIRMATIC series:** electropneumatic safety valves

**DSH series:** desuperheaters

## Approvals and certifications

|                        |   |
|------------------------|---|
| UNI EN ISO 9001: 2008  | ✓ |
| UNI EN ISO 14001: 2004 | ✓ |
| 97 / 23 / CE (PED)     | ✓ |
| 94 / 09 / CE (ATEX)    | ✓ |
| RINA                   | ✓ |
| GOST R+RTN             | ✓ |
| CRN Canada             | ✓ |

## Cooperations with notified bodies

|                  |   |
|------------------|---|
| LLOYD's REGISTER | ✓ |
| ABS              | ✓ |
| BV               | ✓ |
| DNV              | ✓ |

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