

## T 8026 EN

### Type 3244-1 and Type 3244-7 Pneumatic Control Valves

Type 3244 Three-way Valve · DIN and ANSI versions



#### Application

Mixing or diverting valve for process engineering and industrial applications

**Valve size** DN 15 to 150 · NPS ½ to 6  
**Pressure rating** PN 10 to 40 · Class 150 and 300  
**Temperatures** -196 to +450 °C · -325 to +842 °F

Type 3244 Three-way Valve with

- Type 3271 Pneumatic Actuator (Fig. 1)
- Type 3277 Pneumatic Actuator (Fig. 2) for integral positioner attachment

Valve body made of

- Cast iron (DIN version only)
- Cast steel
- Cast stainless steel

Undivided valve bonnet

The control valves, designed according to the modular assembly principle, can be equipped with various accessories: Positioners, limit switches, solenoid valves and other accessories according to IEC 60534-6 <sup>1)</sup> and NAMUR recommendation (see Information Sheet ▶ T 8350 for more details).

#### Versions

**Standard version** designed for temperatures from -10 to +220 °C (15 to 430 °F) with pneumatic actuator

- **Type 3244-1** (Fig. 1) · Type 3244 Valve with Type 3271 Actuator (see Data Sheet ▶ T 8310-1)
- **Type 3244-7** (Fig. 2) · Type 3244 Valve and Type 3277 Pneumatic Actuator for integral positioner attachment (see Data Sheet ▶ T 8310-1)

#### Further versions

- **Insulating section or bellows seal** · See Technical data
- **Adjustable packing** · Details on request
- **Heating jacket**
- **Additional handwheel** · See Data Sheet ▶ T 8310-1
- **Type 3244-2 Electric Control Valve** · Details on request
- **Type 3244-3 Manually Operated Valve** with Type 3273 Hand-operated Actuator · See Data Sheet ▶ T 8312

<sup>1)</sup> Accessories required. See associated actuator documentation.



**Fig. 1:** Type 3244-1 Pneumatic Control Valve with Type 3271 Actuator



**Fig. 2:** Type 3244-7 Pneumatic Control Valve with Type 3277 Actuator

### Principle of operation (Fig. 3 and Fig. 4)

Depending on the version, the three-way valve can be used for either mixing or diverting service.

In mixing valves, the process media to be mixed enter at valve ports **A** and **B**. The combined flow exits the valve at port **AB** (see Fig. 3). The flow rate from ports **A** or **B** to **AB** depends on the cross-sectional area of flow between the seats and plugs.

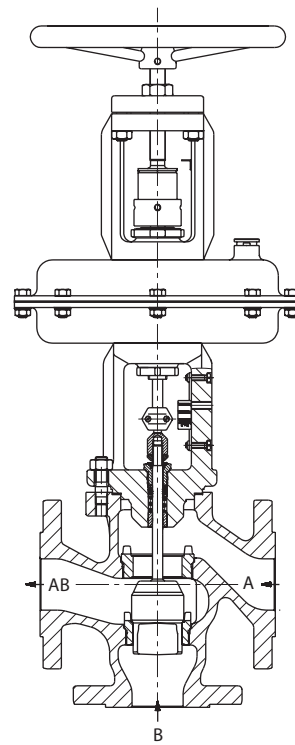
In diverting valves, the process medium enters at the valve port **AB** and the partial flows exit at ports **A** and **B** (see Fig. 4).

**Note:** The design of the mixing and diverting valves in sizes DN 15 to 25 (NPS ½ to 1) is identical.

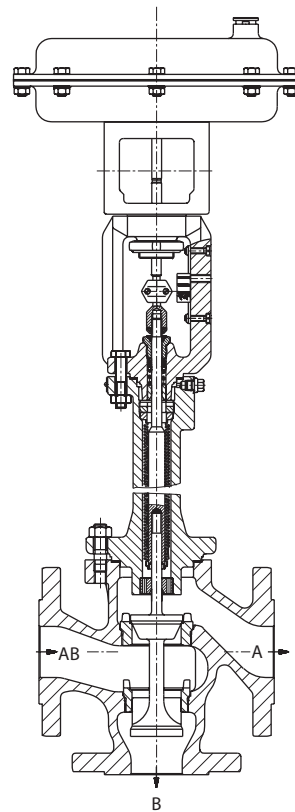
### Fail-safe position

Depending on how the springs are arranged in the pneumatic actuator (► T 8310-1), the valve has two different fail-safe positions effective upon air supply failure.

- **Actuator stem extends:** when the supply air fails, port **B** is closed in mixing valves and port **A** is closed in diverting valves.
- **Actuator stem retracts:** when the supply air fails, port **A** is closed in mixing valves and port **B** is closed in diverting valves.





**Fig. 3:** Type 3244-1 Pneumatic Control Valve with Type 3244 Three-way Valve (plug arrangement for mixing service, DN 15 to 25 for diverting service as well, and Type 3271 Actuator with additional handwheel)



**Fig. 4:** Type 3244-7 Pneumatic Control Valve with Type 3244 Three-way Valve, DN 32 to 150 (plug arrangement for diverting service), additional bellows seal and Type 3277 Actuator

**Table 1: Technical data**

| Version   | DIN   |                              |                                | ANSI  |                                    |
|---|---|------------------------------|--------------------------------|---|------------------------------------|
| Valve size  | DN 15 to 150  |                              |                                | NPS ½ to 6  |                                    |
| Material  | Cast iron<br>EN-GJL-250<br>(EN-JL1040)  | Cast steel 1.0619            | Cast stainless steel<br>1.4408 | Cast steel<br>A216 WCC  | Cast stainless steel<br>A351 CF8M  |
| Pressure rating   | PN 10, 16, 25, 40   |                              |                                | Class 150 or 300  |                                    |
| Type of end connections   | All flange types acc. to DIN EN 1092-1/-2 <sup>1)</sup>                           |                              |                                | RF <sup>2)</sup>  |                                    |
| Seat/plug seal  | Metal seal  |                              |                                | Metal seal  |                                    |
| Characteristic  | Linear  |                              |                                | Linear  |                                    |
| Rangeability  | 50:1 for DN 15 to 50<br>30:1 for DN 65 to 150                                     |                              |                                | 50:1 for NPS ½ to 2<br>30:1 for NPS 2½ to 6   |                                    |
| <b>Temperature ranges in °C and °F · Permissible operating pressures according to pressure-temperature diagrams</b> |   |                              |                                |   |                                    |
| Body without insulating section   | -10 to +220 °C  |                              |                                | -10 to +220 °C (15 to 430 °F)   |                                    |
| Body with   |   |                              |                                |   |                                    |
| Short insulating section <sup>3)</sup>  | -10 to +300 °C  | -10 to +400 °C <sup>4)</sup> | -50 to +450 °C <sup>4)</sup>   | -29 to +427 °C<br>(-20 to +800 °F)  | -50 to +450 °C<br>(-58 to +842 °F) |
| Short bellows seal <sup>3)</sup>  | -10 to +300 °C  | -10 to +400 °C <sup>4)</sup> | -50 to +450 °C <sup>4)</sup>   | -29 to +400 °C<br>(-20 to +750 °F)  | -50 to +450 °C<br>(-58 to +842 °F) |
| <b>Leakage class according to IEC 60534-4 or ANSI/FCI 70-2</b>  | I (0.05 % K <sub>Vs</sub> )   |                              |                                | I (0.05 % K <sub>Vs</sub> )   |                                    |
| Compliance  |  |                              |                                |  |                                    |

<sup>1)</sup> Except for tongue Form D, groove Form D and female face Form F for DN 15

<sup>2)</sup> Other versions for NPS ¾ and larger available on request

<sup>3)</sup> Long insulating section or bellows seal on request

<sup>4)</sup> Version for lower temperatures on request

**Table 2: Materials**

| Standard version          | DIN  |                   |                                | ASTM                   |                                   |
|---------------------------|--|-------------------|--------------------------------|------------------------|-----------------------------------|
| Valve body <sup>1)</sup>  | Cast iron<br>EN-GJL-250<br>(EN-JL1040)                     | Cast steel 1.0619 | Cast stainless steel<br>1.4408 | Cast steel<br>A216 WCC | Cast stainless steel<br>A351 CF8M |
| Valve bonnet              | 1.0460/<br>EN-GJL-250<br>(EN-JL1040)                       | 1.0460            | 1.4401/1.4404                  | A105                   | A182 F316/<br>A182 F316L          |
| Seat <sup>2)</sup>        | 1.4006   |                   | 1.4404                         | A182 F6a Class 2       | F316L                             |
| Plug <sup>2)</sup>        | 1.4006   |                   | 1.4404                         | A182 F6a Class 2       | A182 F316L                        |
| Seat/plug seal            | Metal seal   |                   |                                | Metal seal             |                                   |
| Guide bushing             | 1.4104   |                   | 1.4404                         | A 582 430F             | A182 F316L                        |
| Packing <sup>3)</sup>     | V-ring packing: PTFE with carbon · Spring: 1.4310/A479 302 |                   |                                |                        |                                   |
| Body gaskets              | Graphite on metal core                                     |                   |                                | Graphite on metal core |                                   |
| <b>Insulating section</b> | 1.0460   |                   | 1.4401/1.4404                  | A105                   | A182 F316/<br>A182 F316L          |
| <b>Bellows seal</b>       |  |                   |                                |                        |                                   |
| Intermediate piece        | 1.0460   |                   | 1.4401/1.4404                  | A105                   | A182 F316/<br>A182 F316L          |
| Metal bellows             | 1.4571 <sup>4)</sup>                                       |                   |                                | 316 Ti                 |                                   |

<sup>1)</sup> Special materials for applications with sea water: 1.4538, duplex 1.4470; nickel-based alloy: 9.4610; other special materials on request

<sup>2)</sup> All seats and metal-seated plug also with Stellite® facing; for ≤DN 100 plug up to seat bore 38 made of solid Stellite® available.

<sup>3)</sup> Other packings on request (see Information Sheet ▶ T 8000-1)

<sup>4)</sup> Other materials on request

**Notes on the differential pressures (Table 3.1 to Table 4.2)**

- Differential pressures in parentheses refer to the values for half travel in parentheses in the bench range column
- The tables apply to both fail-safe positions.
- The springs in actuators with fail-safe action "actuator stem retracts" cannot be preloaded.
- v2 is added to the diaphragm area (e.g. 175v2 cm<sup>2</sup>) to indicate actuators with a full diaphragm.

**Table 3:**  $K_{Vs}$  and  $C_v$  coefficients as well as permissible differential pressures for Type 3244 Mixing Valve

**Table 3.1:** DIN version · Pressures in bar

|           |                           |        |                       | Actuator area         | Bench range                   | Required supply pressure | Bench range                 | Required supply pressure | Bench range                | Required supply pressure |
|-----------|---------------------------|--------|-----------------------|-----------------------|-------------------------------|--------------------------|-----------------------------|--------------------------|----------------------------|--------------------------|
|           |                           |        |                       | 120 cm <sup>2</sup>   | 0.4 to 2.0                    | 2.4                      | 1.4 to 2.3                  | 3.7                      | 2.1 to 3.3                 | 4.4                      |
|           |                           |        |                       | 175v2 cm <sup>2</sup> | 0.4 to 2.0                    | 2.4                      | 0.5 to 2.5                  | 3                        | 1.3 to 2.9                 | 4.2                      |
|           |                           |        |                       | 350 cm <sup>2</sup>   | 0.4 to 2.0                    | 2.4                      | 1.4 to 2.3                  | 3.7                      | 2.1 to 3.3                 | 5.4                      |
|           |                           |        |                       | 355v2 cm <sup>2</sup> | 0.4 to 2.0<br>(1.2 to 2.0)    | 2.4 (3.2)                | 1.4 to 2.6<br>(2.0 to 2.6)  | 4 (4.6)                  | 1.9 to 3.3<br>(2.6 to 3.3) | 5.2 (5.9)                |
|           |                           |        |                       | 700 cm <sup>2</sup>   | 0.4 to 2.0<br>(1.2 to 2.0)    | 2.4 (3.2)                | 1.4 to 2.3<br>(1.85 to 2.3) | 3.7 (4.15)               | 2.1 to 3.3<br>(2.7 to 3.3) | 5.4 (6)                  |
|           |                           |        |                       | 750v2 cm <sup>2</sup> | 0.4 to 2.0<br>(1.2 to 2.0)    | 2.4 (3.2)                | 1.4 to 2.4<br>(1.9 to 2.4)  | 3.8 (4.3)                | 1.9 to 3.1<br>(2.5 to 3.1) | 5 (5.6)                  |
| DN        | $K_{Vs}$ for mixing valve | Seat Ø | Rated travel          | Actuator area         | $\Delta p$ when $p_2 = 0$ bar |                          |                             |                          |                            |                          |
| 15        | 2 · 4                     | 24     | 15                    | 120 cm <sup>2</sup>   | 5                             | 29                       | 40                          |                          |                            |                          |
| 20        | 2 · 4 · 6.3               |        |                       | 175v2 cm <sup>2</sup> | 9.5                           | 13                       | 40                          |                          |                            |                          |
| 25        | 2 · 4<br>6.3 · 10         |        |                       | 350 cm <sup>2</sup>   | 23.5                          | 40                       | 40                          |                          |                            |                          |
| 32 to 50  | 6.3 · 10<br>16            | 31     |                       | 120 cm <sup>2</sup>   | 2.5                           | 17                       | 27                          |                          |                            |                          |
|           |                           |        |                       | 175v2 cm <sup>2</sup> | 5                             | 7                        | 24                          |                          |                            |                          |
|           |                           |        |                       | 350 cm <sup>2</sup>   | 13.5                          | 40                       | 40                          |                          |                            |                          |
| 40 and 50 | 25                        | 38     |                       | 120 cm <sup>2</sup>   | -                             | 10.5                     | 17.5                        |                          |                            |                          |
|           |                           |        |                       | 175v2 cm <sup>2</sup> | 3.1                           | 4.5                      | 15.5                        |                          |                            |                          |
|           |                           |        |                       | 350 cm <sup>2</sup>   | 8.5                           | 36.5                     | 40                          |                          |                            |                          |
| 50        | 40                        | 48     |                       | 120 cm <sup>2</sup>   | -                             | 6.5                      | 10.5                        |                          |                            |                          |
|           |                           |        |                       | 175v2 cm <sup>2</sup> | -                             | 2.5                      | 9.5                         |                          |                            |                          |
|           |                           |        |                       | 350 cm <sup>2</sup>   | 5                             | 22.5                     | 35                          |                          |                            |                          |
|           |                           |        |                       | 355v2 cm <sup>2</sup> | (19.5)                        | (33.5)                   | (40)                        |                          |                            |                          |
|           |                           |        |                       | 700 cm <sup>2</sup>   | (40)                          | -                        | -                           |                          |                            |                          |
|           |                           |        |                       | 750v2 cm <sup>2</sup> | (40)                          | -                        | -                           |                          |                            |                          |
| 65 and 80 | 25 and 40                 | 48     | 350 cm <sup>2</sup>   | 5                     | 22.5                          | 35                       |                             |                          |                            |                          |
|           |                           |        | 355v2 cm <sup>2</sup> | (19.5)                | (33.5)                        | (40)                     |                             |                          |                            |                          |
|           |                           |        | 700 cm <sup>2</sup>   | (40)                  | -                             | -                        |                             |                          |                            |                          |
|           | 60                        | 63     | 750v2 cm <sup>2</sup> | (40)                  | -                             | -                        |                             |                          |                            |                          |
|           |                           |        | 350 cm <sup>2</sup>   | 2.7                   | 12.5                          | 20                       |                             |                          |                            |                          |
|           |                           |        | 355v2 cm <sup>2</sup> | (11)                  | (19)                          | (25.5)                   |                             |                          |                            |                          |
|           |                           |        | 700 cm <sup>2</sup>   | (23)                  | (36)                          | (40)                     |                             |                          |                            |                          |
| 80        | 80                        | 75     | 750v2 cm <sup>2</sup> | (24.5)                | (40)                          | (40)                     |                             |                          |                            |                          |
|           |                           |        | 350 cm <sup>2</sup>   | -                     | 8.5                           | 14                       |                             |                          |                            |                          |
|           |                           |        | 355v2 cm <sup>2</sup> | (7.5)                 | (13)                          | (17.5)                   |                             |                          |                            |                          |
|           |                           |        | 700 cm <sup>2</sup>   | (16)                  | (25.5)                        | (37.5)                   |                             |                          |                            |                          |
|           |                           |        |                       | 750v2 cm <sup>2</sup> | (17)                          | (28)                     | (37)                        |                          |                            |                          |

|     |                                  |        |              | Actuator area         | Bench range                    | Required supply pressure | Bench range                 | Required supply pressure | Bench range                | Required supply pressure |
|-----|----------------------------------|--------|--------------|-----------------------|--------------------------------|--------------------------|-----------------------------|--------------------------|----------------------------|--------------------------|
|     |                                  |        |              | 120 cm <sup>2</sup>   | 0.4 to 2.0                     | 2.4                      | 1.4 to 2.3                  | 3.7                      | 2.1 to 3.3                 | 4.4                      |
|     |                                  |        |              | 175v2 cm <sup>2</sup> | 0.4 to 2.0                     | 2.4                      | 0.5 to 2.5                  | 3                        | 1.3 to 2.9                 | 4.2                      |
|     |                                  |        |              | 350 cm <sup>2</sup>   | 0.4 to 2.0                     | 2.4                      | 1.4 to 2.3                  | 3.7                      | 2.1 to 3.3                 | 5.4                      |
|     |                                  |        |              | 355v2 cm <sup>2</sup> | 0.4 to 2.0<br>(1.2 to 2.0)     | 2.4 (3.2)                | 1.4 to 2.6<br>(2.0 to 2.6)  | 4 (4.6)                  | 1.9 to 3.3<br>(2.6 to 3.3) | 5.2 (5.9)                |
|     |                                  |        |              | 700 cm <sup>2</sup>   | 0.4 to 2.0<br>(1.2 to 2.0)     | 2.4 (3.2)                | 1.4 to 2.3<br>(1.85 to 2.3) | 3.7 (4.15)               | 2.1 to 3.3<br>(2.7 to 3.3) | 5.4 (6)                  |
|     |                                  |        |              | 750v2 cm <sup>2</sup> | 0.4 to 2.0<br>(1.2 to 2.0)     | 2.4 (3.2)                | 1.4 to 2.4<br>(1.9 to 2.4)  | 3.8 (4.3)                | 1.9 to 3.1<br>(2.5 to 3.1) | 5 (5.6)                  |
| DN  | K <sub>VS</sub> for mixing valve | Seat Ø | Rated travel | Actuator area         | Δp when p <sub>2</sub> = 0 bar |                          |                             |                          |                            |                          |
| 100 | 100                              | 80     | 30           | 700 cm <sup>2</sup>   | 3.9                            | 16.5                     | 25                          |                          |                            |                          |
|     | 160                              | 100    |              |                       | 2.3                            | 10                       | 16                          |                          |                            |                          |
| 125 | 140                              | 90     |              |                       | 3                              | 13                       | 20                          |                          |                            |                          |
|     | 200                              | 110    |              |                       | –                              | 8.5                      | 13                          |                          |                            |                          |
| 150 | 200                              | 110    |              |                       | –                              | 8.5                      | 13                          |                          |                            |                          |
|     | 300                              | 130    |              |                       | –                              | 6                        | 9                           |                          |                            |                          |
| 100 | 100                              | 80     |              | 750v2 cm <sup>2</sup> | 4.3                            | 17.5                     | 24.5                        |                          |                            |                          |
|     | 160                              | 100    |              |                       | 2.6                            | 11                       | 15.5                        |                          |                            |                          |
| 125 | 140                              | 90     |              |                       | 3.3                            | 14                       | 19                          |                          |                            |                          |
|     | 200                              | 110    |              |                       | 2.1                            | 9                        | 12.5                        |                          |                            |                          |
| 150 | 200                              | 110    | 2.1          |                       | 9                              | 12.5                     |                             |                          |                            |                          |
|     | 300                              | 130    | –            |                       | 6.5                            | 9                        |                             |                          |                            |                          |

**Table 3.2:** ANSI version · Pressures in psi

| Valve size  |              | C <sub>v</sub> for mixing valve | Seat Ø inch (mm) | Rated travel inch (mm) | Actuator area         | Δp when p <sub>2</sub> = 0 psi |             |                          |             |                          |         |
|-------------|--------------|---------------------------------|------------------|------------------------|-----------------------|--------------------------------|-------------|--------------------------|-------------|--------------------------|---------|
| NPS         | DN           |                                 |                  |                        |                       | Actuator area                  | Bench range | Required supply pressure | Bench range | Required supply pressure |         |
|             |              |                                 |                  |                        | 120 cm <sup>2</sup>   | 5 to 29                        | 34          | 20 to 33                 | 53          | 30 to 47                 | 63      |
|             |              |                                 |                  |                        | 175v2 cm <sup>2</sup> | 5 to 29                        | 34          | 7 to 36                  | 43          | 18 to 42                 | 60      |
|             |              |                                 |                  |                        | 350 cm <sup>2</sup>   | 5 to 29                        | 34          | 20 to 33                 | 53          | 30 to 47                 | 78      |
|             |              |                                 |                  |                        | 355v2 cm <sup>2</sup> | 5 to 29<br>(17 to 29)          | 34 (46)     | 20 to 37<br>(29 to 37)   | 58 (66)     | 27 to 47<br>(37 to 47)   | 75 (85) |
|             |              |                                 |                  |                        | 700 cm <sup>2</sup>   | 5 to 29<br>(17 to 29)          | 34 (46)     | 20 to 33<br>(26 to 33)   | 53 (60)     | 30 to 47<br>(39 to 47)   | 78 (87) |
|             |              |                                 |                  |                        | 750v2 cm <sup>2</sup> | 5 to 29<br>(17 to 29)          | 34 (46)     | 20 to 34<br>(27 to 34)   | 55 (62)     | 27 to 44<br>(36 to 44)   | 72 (81) |
| Valve size  |              | C <sub>v</sub> for mixing valve | Seat Ø inch (mm) | Rated travel inch (mm) | Actuator area         | Δp when p <sub>2</sub> = 0 psi |             |                          |             |                          |         |
| NPS         | DN           |                                 |                  |                        |                       | Actuator area                  | Bench range | Required supply pressure | Bench range | Required supply pressure |         |
| ½           | 15           | 2.3 · 5                         | 0.94<br>(24)     | 0.59<br>(15)           | 120 cm <sup>2</sup>   | 72                             | 420         | 580                      |             |                          |         |
| ¾           | 20           | 2.3 · 5<br>7.5                  |                  |                        | 175v2 cm <sup>2</sup> | 137                            | 188         | 580                      |             |                          |         |
| 1           | 25           | 2.3 · 5<br>7.5 · 12             |                  |                        | 350 cm <sup>2</sup>   | 340                            | 580         | 580                      |             |                          |         |
| 1½ and<br>2 | 40 and<br>50 | 7.5 · 12<br>20                  | 1.22<br>(31)     |                        | 120 cm <sup>2</sup>   | 36                             | 246         | 391                      |             |                          |         |
|             |              |                                 |                  |                        | 175v2 cm <sup>2</sup> | 72                             | 101         | 348                      |             |                          |         |
|             |              |                                 |                  |                        | 350 cm <sup>2</sup>   | 195                            | 580         | 580                      |             |                          |         |
| 2           | 50           | 47                              | 1.49<br>(38)     |                        | 120 cm <sup>2</sup>   | –                              | 152         | 253                      |             |                          |         |
|             |              |                                 |                  |                        | 175v2 cm <sup>2</sup> | 44                             | 65          | 224                      |             |                          |         |
|             |              |                                 |                  |                        | 350 cm <sup>2</sup>   | 123                            | 529         | 580                      |             |                          |         |
| 2½ and<br>3 | 65 and<br>80 | 30 and<br>47                    | 1.89<br>(48)     |                        | 120 cm <sup>2</sup>   | –                              | 94          | 152                      |             |                          |         |
|             |              |                                 |                  |                        | 175v2 cm <sup>2</sup> | –                              | 36          | 137                      |             |                          |         |
|             |              |                                 |                  |                        | 350 cm <sup>2</sup>   | 72                             | 326         | 507                      |             |                          |         |
| 3           | 80           | 95                              | 2.48<br>(63)     |                        | 355v2 cm <sup>2</sup> | (282)                          | (485)       | (580)                    |             |                          |         |
|             |              |                                 |                  |                        | 700 cm <sup>2</sup>   | (580)                          | –           | –                        |             |                          |         |
|             |              |                                 |                  |                        | 750v2 cm <sup>2</sup> | (580)                          | –           | –                        |             |                          |         |
| 3           | 80           | 95                              | 2.95<br>(75)     | 350 cm <sup>2</sup>    | 39                    | 181                            | 290         |                          |             |                          |         |
|             |              |                                 |                  | 355v2 cm <sup>2</sup>  | (159)                 | (275)                          | (369)       |                          |             |                          |         |
|             |              |                                 |                  | 700 cm <sup>2</sup>    | (333)                 | (522)                          | (580)       |                          |             |                          |         |
| 3           | 80           | 95                              | 2.95<br>(75)     | 750v2 cm <sup>2</sup>  | (355)                 | (580)                          | (580)       |                          |             |                          |         |
|             |              |                                 |                  | 350 cm <sup>2</sup>    | –                     | 123                            | 203         |                          |             |                          |         |
|             |              |                                 |                  | 355v2 cm <sup>2</sup>  | (108)                 | (188)                          | (253)       |                          |             |                          |         |
| 3           | 80           | 95                              | 2.95<br>(75)     | 700 cm <sup>2</sup>    | (232)                 | (369)                          | (543)       |                          |             |                          |         |
|             |              |                                 |                  | 750v2 cm <sup>2</sup>  | (246)                 | (406)                          | (536)       |                          |             |                          |         |

|            |     |                                 |                  |                        | Actuator area         | Bench range                    | Required supply pressure | Bench range            | Required supply pressure | Bench range            | Required supply pressure |
|------------|-----|---------------------------------|------------------|------------------------|-----------------------|--------------------------------|--------------------------|------------------------|--------------------------|------------------------|--------------------------|
|            |     |                                 |                  |                        | 120 cm <sup>2</sup>   | 5 to 29                        | 34                       | 20 to 33               | 53                       | 30 to 47               | 63                       |
|            |     |                                 |                  |                        | 175v2 cm <sup>2</sup> | 5 to 29                        | 34                       | 7 to 36                | 43                       | 18 to 42               | 60                       |
|            |     |                                 |                  |                        | 350 cm <sup>2</sup>   | 5 to 29                        | 34                       | 20 to 33               | 53                       | 30 to 47               | 78                       |
|            |     |                                 |                  |                        | 355v2 cm <sup>2</sup> | 5 to 29<br>(17 to 29)          | 34 (46)                  | 20 to 37<br>(29 to 37) | 58 (66)                  | 27 to 47<br>(37 to 47) | 75 (85)                  |
|            |     |                                 |                  |                        | 700 cm <sup>2</sup>   | 5 to 29<br>(17 to 29)          | 34 (46)                  | 20 to 33<br>(26 to 33) | 53 (60)                  | 30 to 47<br>(39 to 47) | 78 (87)                  |
|            |     |                                 |                  |                        | 750v2 cm <sup>2</sup> | 5 to 29<br>(17 to 29)          | 34 (46)                  | 20 to 34<br>(27 to 34) | 55 (62)                  | 27 to 44<br>(36 to 44) | 72 (81)                  |
| Valve size |     | C <sub>v</sub> for mixing valve | Seat Ø inch (mm) | Rated travel inch (mm) | Actuator area         | Δp when p <sub>2</sub> = 0 psi |                          |                        |                          |                        |                          |
| NPS        | DN  |                                 |                  |                        |                       |                                |                          |                        |                          |                        |                          |
| 4          | 100 | 120                             | 3.15 (80)        | 1.18 (30)              | 700 cm <sup>2</sup>   | 56                             | 239                      | 362                    |                          |                        |                          |
|            |     | 190                             | 3.93 (100)       |                        |                       | 33                             | 145                      | 232                    |                          |                        |                          |
| 6          | 150 | 230                             | 4.33 (110)       |                        |                       | –                              | 123                      | 188                    |                          |                        |                          |
|            |     | 350                             | 5.12 (130)       |                        |                       | –                              | 87                       | 130                    |                          |                        |                          |
| 4          | 100 | 120                             | 3.15 (80)        |                        | 750v2 cm <sup>2</sup> | 62                             | 253                      | 355                    |                          |                        |                          |
|            |     | 190                             | 3.93 (100)       |                        |                       | 37                             | 159                      | 224                    |                          |                        |                          |
| 6          | 150 | 230                             | 4.33 (110)       |                        |                       | 30                             | 130                      | 181                    |                          |                        |                          |
|            |     | 350                             | 5.12 (130)       |                        |                       | –                              | 94                       | 130                    |                          |                        |                          |

**Table 4:**  $K_{VS}$  and  $C_V$  coefficients as well as permissible differential pressures for Type 3244 Diverting Valve

**Table 4.1:** DIN version · Pressures in bar

**Valves in DN 65 to 150**

- Direction of flow AB ⇒ A with maximum  $K_{VS}$
- Direction of flow AB ⇒ B with reduced  $K_{VS}$

|  |  |  |  | Actuator area         | Bench range                | Required supply pressure | Bench range                 | Required supply pressure | Bench range                | Required supply pressure |
|--|--|--|--|-----------------------|----------------------------|--------------------------|-----------------------------|--------------------------|----------------------------|--------------------------|
|  |  |  |  | 120 cm <sup>2</sup>   | 0.4 to 2.0                 | 2.4                      | 1.4 to 2.3                  | 3.7                      | 2.1 to 3.3                 | 4.4                      |
|  |  |  |  | 175v2 cm <sup>2</sup> | 0.4 to 2.0                 | 2.4                      | 0.5 to 2.5                  | 3                        | 1.3 to 2.9                 | 4.2                      |
|  |  |  |  | 350 cm <sup>2</sup>   | 0.4 to 2.0                 | 2.4                      | 1.4 to 2.3                  | 3.7                      | 2.1 to 3.3                 | 5.4                      |
|  |  |  |  | 355v2 cm <sup>2</sup> | 0.4 to 2.0<br>(1.2 to 2.0) | 2.4                      | 1.4 to 2.6<br>(2.0 to 2.6)  | 4 (4.6)                  | 1.9 to 3.3<br>(2.6 to 3.3) | 5.2 (5.9)                |
|  |  |  |  | 700 cm <sup>2</sup>   | 0.4 to 2.0<br>(1.2 to 2.0) | 2.4 (3.2)                | 1.4 to 2.3<br>(1.85 to 2.3) | 3.7 (4.15)               | 2.1 to 3.3<br>(2.7 to 3.3) | 5.4 (6)                  |
|  |  |  |  | 750v2 cm <sup>2</sup> | 0.4 to 2.0<br>(1.2 to 2.0) | 2.4                      | 1.4 to 2.4<br>(1.9 to 2.4)  | 3.8 (4.3)                | 1.9 to 3.1<br>(2.5 to 3.1) | 5 (5.6)                  |

| DN        | $K_{VS}$ for diverting valve | Seat Ø | Rated travel | Actuator area | $\Delta p$ when $p_2 = 0$ bar |        |      |
|-----------|------------------------------|--------|--------------|---------------|-------------------------------|--------|------|
| 15        | 2 · 4                        | 24     | 15           | 120           | 5                             | 29     | 40   |
| 20        | 2 · 4 · 6.3                  |        |              | 175v2         | 9.5                           | 13     | 40   |
| 25        | 2 · 4<br>6.3 · 10            |        |              | 350           | 23.5                          | 40     | 40   |
| 32 to 50  | 6.3 · 10<br>16               | 31     |              | 120           | 2.5                           | 17     | 27   |
|           |                              |        |              | 175v2         | 5                             | 7      | 24   |
|           |                              |        |              | 350           | 13.5                          | 40     | 40   |
| 40 and 50 | 25                           | 38     |              | 120           | -                             | 10.5   | 17.5 |
|           |                              |        |              | 175v2         | 3.1                           | 4.5    | 15.5 |
|           |                              |        |              | 350           | 8.5                           | 36.5   | 40   |
| 50 to 80  | 40                           | 48     |              | 120           | -                             | 6.5    | 10.5 |
|           |                              |        |              | 175v2         | -                             | 2.5    | 9.5  |
|           |                              |        |              | 350           | 5                             | 22.5   | 35   |
|           |                              |        |              | 355v2         | (19.5)                        | (33.5) | (40) |
|           |                              |        |              | 700           | (40)                          | -      | -    |
|           |                              |        |              | 750v2         | (40)                          | -      | -    |
| 65 and 80 | 25 and 40                    | 48     | 350          | 5             | 22.5                          | 35     |      |
|           |                              |        | 355v2        | (19.5)        | (33.5)                        | (40)   |      |
|           |                              |        | 700          | (40)          | -                             | -      |      |
|           |                              |        | 750v2        | (40)          | -                             | -      |      |
| 65        | 60/40                        | 63/48  | 350          | 2.7           | 12.5                          | 20     |      |
|           |                              |        | 355v2        | (11)          | (19)                          | (25.5) |      |
|           |                              |        | 700          | (23)          | (36)                          | (40)   |      |
|           |                              |        | 750v2        | (24.5)        | (40)                          | (40)   |      |
| 80        | 60                           | 63     | 350          | 2.7           | 12.5                          | 20     |      |
|           |                              |        | 355v2        | (11)          | (19)                          | (25.5) |      |
|           |                              |        | 700          | (23)          | (36)                          | (40)   |      |
|           |                              |        | 750v2        | (24.5)        | (40)                          | (40)   |      |
| 80        | 80/60                        | 75/63  | 350          | -             | 8.5                           | 14     |      |
|           |                              |        | 355v2        | (7.5)         | (13)                          | (17.5) |      |
|           |                              |        | 700          | (16)          | (25.5)                        | (37.5) |      |
|           |                              |        | 750v2        | (17)          | (28)                          | (37)   |      |



|     |                                     |         |              | Actuator area         | Bench range                    | Required supply pressure | Bench range                 | Required supply pressure | Bench range                | Required supply pressure |
|-----|-------------------------------------|---------|--------------|-----------------------|--------------------------------|--------------------------|-----------------------------|--------------------------|----------------------------|--------------------------|
|     |                                     |         |              | 120 cm <sup>2</sup>   | 0.4 to 2.0                     | 2.4                      | 1.4 to 2.3                  | 3.7                      | 2.1 to 3.3                 | 4.4                      |
|     |                                     |         |              | 175v2 cm <sup>2</sup> | 0.4 to 2.0                     | 2.4                      | 0.5 to 2.5                  | 3                        | 1.3 to 2.9                 | 4.2                      |
|     |                                     |         |              | 350 cm <sup>2</sup>   | 0.4 to 2.0                     | 2.4                      | 1.4 to 2.3                  | 3.7                      | 2.1 to 3.3                 | 5.4                      |
|     |                                     |         |              | 355v2 cm <sup>2</sup> | 0.4 to 2.0<br>(1.2 to 2.0)     | 2.4                      | 1.4 to 2.6<br>(2.0 to 2.6)  | 4 (4.6)                  | 1.9 to 3.3<br>(2.6 to 3.3) | 5.2 (5.9)                |
|     |                                     |         |              | 700 cm <sup>2</sup>   | 0.4 to 2.0<br>(1.2 to 2.0)     | 2.4 (3.2)                | 1.4 to 2.3<br>(1.85 to 2.3) | 3.7 (4.15)               | 2.1 to 3.3<br>(2.7 to 3.3) | 5.4 (6)                  |
|     |                                     |         |              | 750v2 cm <sup>2</sup> | 0.4 to 2.0<br>(1.2 to 2.0)     | 2.4                      | 1.4 to 2.4<br>(1.9 to 2.4)  | 3.8 (4.3)                | 1.9 to 3.1<br>(2.5 to 3.1) | 5 (5.6)                  |
| DN  | K <sub>VS</sub> for diverting valve | Seat Ø  | Rated travel | Actuator area         | Δp when p <sub>2</sub> = 0 bar |                          |                             |                          |                            |                          |
| 100 | 100                                 | 80      | 30           | 700                   | 3.9                            | 16.5                     | 25                          |                          |                            |                          |
|     | 160/100                             | 100/80  |              |                       | 2.3                            | 10                       | 16                          |                          |                            |                          |
| 125 | 140                                 | 90      |              |                       | 3                              | 13                       | 20                          |                          |                            |                          |
|     | 200/140                             | 110/90  |              |                       | –                              | 8.5                      | 13                          |                          |                            |                          |
| 150 | 200                                 | 110     |              |                       | –                              | 8.5                      | 13                          |                          |                            |                          |
|     | 300/200                             | 130/110 |              |                       | –                              | 6                        | 9                           |                          |                            |                          |
| 100 | 100                                 | 80      |              | 750v2                 | 4.3                            | 17.5                     | 24.5                        |                          |                            |                          |
|     | 160/100                             | 100/80  |              |                       | 2.6                            | 11                       | 15.5                        |                          |                            |                          |
| 125 | 140                                 | 90      |              |                       | 3.3                            | 14                       | 19                          |                          |                            |                          |
|     | 200/140                             | 110/90  |              |                       | 2.1                            | 9                        | 12.5                        |                          |                            |                          |
| 150 | 200                                 | 110     |              |                       | 2.1                            | 9                        | 12.5                        |                          |                            |                          |
|     | 300/200                             | 130/110 |              |                       | –                              | 6.5                      | 9                           |                          |                            |                          |

**Table 4.2:** ANSI version · Pressures in psi

**Valves in NPS 2½ to 6**

- Direction of flow AB ⇒ A with maximum C<sub>v</sub>
- Direction of flow AB ⇒ B with reduced C<sub>v</sub>

|            |           |                                    |                   | Actuator area          | Bench range           | Required supply pressure       | Bench range            | Required supply pressure | Bench range            | Required supply pressure |
|------------|-----------|------------------------------------|-------------------|------------------------|-----------------------|--------------------------------|------------------------|--------------------------|------------------------|--------------------------|
|            |           |                                    |                   | 120 cm <sup>2</sup>    | 5 to 29               | 34                             | 20 to 33               | 53                       | 30 to 47               | 63                       |
|            |           |                                    |                   | 175v2 cm <sup>2</sup>  | 5 to 29               | 34                             | 7 to 36                | 43                       | 18 to 42               | 60                       |
|            |           |                                    |                   | 350 cm <sup>2</sup>    | 5 to 29               | 34                             | 20 to 33               | 53                       | 30 to 47               | 78                       |
|            |           |                                    |                   | 355v2 cm <sup>2</sup>  | 5 to 29<br>(17 to 29) | 34 (46)                        | 20 to 37<br>(29 to 37) | 58 (66)                  | 27 to 47<br>(37 to 47) | 75 (85)                  |
|            |           |                                    |                   | 700 cm <sup>2</sup>    | 5 to 29<br>(17 to 29) | 34 (46)                        | 20 to 33<br>(26 to 33) | 53 (60)                  | 30 to 47<br>(39 to 47) | 78 (87)                  |
|            |           |                                    |                   | 750v2 cm <sup>2</sup>  | 5 to 29<br>(17 to 29) | 34 (46)                        | 20 to 34<br>(27 to 34) | 55 (62)                  | 27 to 44<br>(36 to 44) | 72 (81)                  |
| Valve size |           | C <sub>v</sub> for diverting valve | Seat Ø inch (mm)  | Rated travel inch (mm) | Actuator area         | Δp when p <sub>2</sub> = 0 psi |                        |                          |                        |                          |
| NPS        | DN        |                                    |                   |                        |                       |                                |                        |                          |                        |                          |
| ½          | 15        | 2.3 · 5                            | 0.94 (24)         | 0.59 (15)              | 120 cm <sup>2</sup>   | 72                             | 420                    | 580                      |                        |                          |
| ¾          | 20        | 2.3 · 5<br>7.5                     |                   |                        | 175v2 cm <sup>2</sup> | 137                            | 188                    | 580                      |                        |                          |
| 1          | 25        | 2.3 · 5<br>7.5 · 12                |                   |                        | 350 cm <sup>2</sup>   | 340                            | 580                    | 580                      |                        |                          |
| 1½ and 2   | 40 and 50 | 7.5 · 12<br>20                     | 1.22 (31)         |                        | 120 cm <sup>2</sup>   | 36                             | 246                    | 391                      |                        |                          |
|            |           |                                    |                   |                        | 175v2 cm <sup>2</sup> | 72                             | 101                    | 348                      |                        |                          |
|            |           | 30                                 | 1.49 (38)         |                        | 350 cm <sup>2</sup>   | 195                            | 580                    | 580                      |                        |                          |
| 2          | 50        | 47                                 | 1.89 (48)         |                        | 120 cm <sup>2</sup>   | –                              | 152                    | 253                      |                        |                          |
|            |           |                                    |                   |                        | 175v2 cm <sup>2</sup> | 44                             | 65                     | 224                      |                        |                          |
|            |           |                                    |                   |                        | 350 cm <sup>2</sup>   | 123                            | 529                    | 580                      |                        |                          |
|            |           |                                    |                   |                        | 120 cm <sup>2</sup>   | –                              | 94                     | 152                      |                        |                          |
|            |           |                                    |                   |                        | 175v2 cm <sup>2</sup> | –                              | 36                     | 137                      |                        |                          |
|            |           |                                    |                   |                        | 350 cm <sup>2</sup>   | 72                             | 326                    | 507                      |                        |                          |
| 2½ and 3   | 65 and 80 | 30 and 47                          | 1.89 (48)         |                        | 355v2 cm <sup>2</sup> | (282)                          | (485)                  | (580)                    |                        |                          |
|            |           |                                    |                   |                        | 700 cm <sup>2</sup>   | (580)                          | –                      | –                        |                        |                          |
|            |           |                                    |                   |                        | 750v2 cm <sup>2</sup> | (580)                          | –                      | –                        |                        |                          |
|            |           | 70                                 | 2.48 (63)         |                        | 350 cm <sup>2</sup>   | 72                             | 326                    | 507                      |                        |                          |
|            |           |                                    |                   |                        | 355v2 cm <sup>2</sup> | (282)                          | (485)                  | (580)                    |                        |                          |
|            |           |                                    |                   |                        | 700 cm <sup>2</sup>   | (580)                          | –                      | –                        |                        |                          |
|            |           |                                    |                   |                        | 750v2 cm <sup>2</sup> | (580)                          | –                      | –                        |                        |                          |
| 3          | 80        | 95/70                              | 2.95/2.48 (75/63) |                        | 350 cm <sup>2</sup>   | 39                             | 181                    | 290                      |                        |                          |
|            |           |                                    |                   |                        | 355v2 cm <sup>2</sup> | (159)                          | (275)                  | (369)                    |                        |                          |
|            |           |                                    |                   |                        | 700 cm <sup>2</sup>   | (333)                          | (522)                  | (580)                    |                        |                          |
|            |           |                                    |                   |                        | 750v2 cm <sup>2</sup> | (355)                          | (580)                  | (580)                    |                        |                          |
|            |           |                                    |                   |                        | 350 cm <sup>2</sup>   | –                              | 123                    | 203                      |                        |                          |
|            |           |                                    |                   |                        | 355v2 cm <sup>2</sup> | (108)                          | (188)                  | (253)                    |                        |                          |
|            |           |                                    |                   |                        | 700 cm <sup>2</sup>   | (232)                          | (369)                  | (543)                    |                        |                          |
|            |           |                                    |                   |                        | 750v2 cm <sup>2</sup> | (246)                          | (406)                  | (536)                    |                        |                          |

|            |     |                                    |                     | Actuator area          | Bench range           | Required supply pressure       | Bench range            | Required supply pressure | Bench range            | Required supply pressure |
|------------|-----|------------------------------------|---------------------|------------------------|-----------------------|--------------------------------|------------------------|--------------------------|------------------------|--------------------------|
|            |     |                                    |                     | 120 cm <sup>2</sup>    | 5 to 29               | 34                             | 20 to 33               | 53                       | 30 to 47               | 63                       |
|            |     |                                    |                     | 175v2 cm <sup>2</sup>  | 5 to 29               | 34                             | 7 to 36                | 43                       | 18 to 42               | 60                       |
|            |     |                                    |                     | 350 cm <sup>2</sup>    | 5 to 29               | 34                             | 20 to 33               | 53                       | 30 to 47               | 78                       |
|            |     |                                    |                     | 355v2 cm <sup>2</sup>  | 5 to 29<br>(17 to 29) | 34 (46)                        | 20 to 37<br>(29 to 37) | 58 (66)                  | 27 to 47<br>(37 to 47) | 75 (85)                  |
|            |     |                                    |                     | 700 cm <sup>2</sup>    | 5 to 29<br>(17 to 29) | 34 (46)                        | 20 to 33<br>(26 to 33) | 53 (60)                  | 30 to 47<br>(39 to 47) | 78 (87)                  |
|            |     |                                    |                     | 750v2 cm <sup>2</sup>  | 5 to 29<br>(17 to 29) | 34 (46)                        | 20 to 34<br>(27 to 34) | 55 (62)                  | 27 to 44<br>(36 to 44) | 72 (81)                  |
| Valve size |     | C <sub>v</sub> for diverting valve | Seat Ø inch (mm)    | Rated travel inch (mm) | Actuator area         | Δp when p <sub>2</sub> = 0 psi |                        |                          |                        |                          |
| NPS        | DN  |                                    |                     |                        |                       |                                |                        |                          |                        |                          |
| 4          | 100 | 120                                | 3.15 (80)           | 1.18 (30)              | 700 cm <sup>2</sup>   | 56                             | 239                    | 362                      |                        |                          |
|            |     | 190/120                            | 3.93/3.15 (100/80)  |                        |                       | 33                             | 145                    | 232                      |                        |                          |
| 6          | 150 | 230                                | 4.33 (110)          |                        |                       | –                              | 123                    | 188                      |                        |                          |
|            |     | 350/230                            | 5.12/4.33 (130/110) |                        |                       | –                              | 87                     | 130                      |                        |                          |
| 4          | 100 | 120                                | 3.15 (80)           |                        | 750v2 cm <sup>2</sup> | 62                             | 253                    | 355                      |                        |                          |
|            |     | 190/120                            | 3.93/3.15 (100/80)  |                        |                       | 37                             | 159                    | 224                      |                        |                          |
| 6          | 150 | 230                                | 4.33 (110)          |                        |                       | 30                             | 130                    | 181                      |                        |                          |
|            |     | 350/230                            | 5.12/4.33 (130/110) |                        |                       | –                              | 94                     | 130                      |                        |                          |

**Table 5: Dimensions****Table 5.1: Type 3244 Valve · DIN version**

| Valve    | DN | 15  | 20  | 25  | 32  | 40  | 50  | 65  | 80  | 100 | 125 | 150 |
|----------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Length L | mm | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 |
| H1       | mm | 235 |     |     |     |     |     | 270 |     | 360 | 375 |     |
| H2       | mm | 70  | 80  | 85  | 100 | 105 | 120 | 130 | 140 | 150 | 200 | 210 |

**Table 5.2: Type 3244 Valve · ANSI version**

| Valve    |           | NPS  | ½    | ¾    | 1    | 1½    | 2     | 2½    | 3     | 4     | 6     |
|----------|-----------|------|------|------|------|-------|-------|-------|-------|-------|-------|
|          |           | DN   | 15   | 20   | 25   | 40    | 50    | 65    | 80    | 100   | 150   |
| Length L | Class 150 | mm   | 184  | 184  | 184  | 222   | 254   | 276   | 298   | 352   | 451   |
|          |           | in   | 7.25 | 7.25 | 7.25 | 8.75  | 10.0  | 10.88 | 11.75 | 13.88 | 17.75 |
|          | Class 300 | mm   | 190  | 194  | 197  | 235   | 267   | 292   | 318   | 368   | 473   |
|          |           | in   | 7.50 | 7.62 | 7.75 | 9.25  | 10.50 | 11.50 | 12.50 | 14.50 | 18.62 |
| H1       | mm        | 235  |      |      |      |       |       | 270   |       | 360   | 375   |
|          | in        | 9.25 |      |      |      |       |       | 10.63 |       | 14.17 | 14.76 |
| H2       | Class 150 | mm   | 92   | 92   | 92   | 111   | 127   | 138   | 149   | 176   | 225.5 |
|          |           | in   | 3.62 | 3.62 | 3.62 | 4.37  | 5.0   | 5.43  | 5.87  | 6.93  | 8.88  |
|          | Class 300 | mm   | 95   | 97   | 98.5 | 117.5 | 133.5 | 146   | 159   | 184   | 236.5 |
|          |           | in   | 3.76 | 3.82 | 3.88 | 4.63  | 5.26  | 5.75  | 6.26  | 7.24  | 9.31  |

**Table 5.3: Type 3271 and Type 3277 Actuators**

| Actuator area    | cm <sup>2</sup> | 120         | 175v2       | 350         | 355v2       | 700         | 750v2       |
|------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Diaphragm ØD     | in              | 6.61        | 8.46        | 11.02       | 11.02       | 15.35       | 15.51       |
|                  | mm              | 168         | 215         | 280         | 280         | 390         | 394         |
| H <sup>1)</sup>  | in              | 2.71        | 3.07        | 3.23        | 4.76        | 7.83        | 9.29        |
|                  | mm              | 69          | 78          | 82          | 121         | 199         | 236         |
| H3 <sup>2)</sup> | in              | 4.33        | 4.33        | 4.33        | 4.33        | 7.48        | 7.48        |
|                  | mm              | 110         | 110         | 110         | 110         | 190         | 190         |
| H5               | Type 3277 in    | 3.46        | 3.98        | 3.98        | 3.98        | 3.98        | 3.98        |
|                  | Type 3277 mm    | 88          | 101         | 101         | 101         | 101         | 101         |
| Thread           | Type 3271       | M30 x 1.5   |             |             |             |             |             |
|                  | Type 3277       | M30 x 1.5   |             |             |             |             |             |
| α                | Type 3271       | G ½ (½ NPT) | G ¼ (¼ NPT) | G ⅜ (⅜ NPT) | G ⅜ (⅜ NPT) | G ⅜ (⅜ NPT) | G ⅜ (⅜ NPT) |
| α2               | Type 3277       | –           | G ⅜         | G ⅜         | G ⅜         | G ⅜         | G ⅜         |

<sup>1)</sup> Height with welded-on lifting eyelet or height of eyebolt according to DIN 580. Height of the swivel lifting hook may differ. Actuators up to 355v2 cm<sup>2</sup> without lifting eyelet

<sup>2)</sup> Minimum clearance required to remove the actuator

**Table 5.4: Version with insulating section or bellows seal /long insulating section or bellows seal**

| Valve |  | DN  | 15    | 20 | 25 | 32 | 40 | 50 | 65    | 80    | 100   | 125 | 150 |
|-------|--|-----|-------|----|----|----|----|----|-------|-------|-------|-----|-----|
|       |  | NPS | ½     | ¾  | 1  | –  | 1½ | 2  | 2½    | 3     | 4     | –   | 6   |
| H4    | With insulating section or bellows seal      | mm  | 420   |    |    |    |    |    | 455   | 645   | 655   |     |     |
|       |  | in  | 16.54 |    |    |    |    |    | 17.91 | 25.39 | 25.79 |     |     |
|       | With long insulating section or bellows seal | mm  | 725   |    |    |    |    |    | 760   | 895   | 900   |     |     |
|       |  | in  | 28.54 |    |    |    |    |    | 29.92 | 35.24 | 35.43 |     |     |

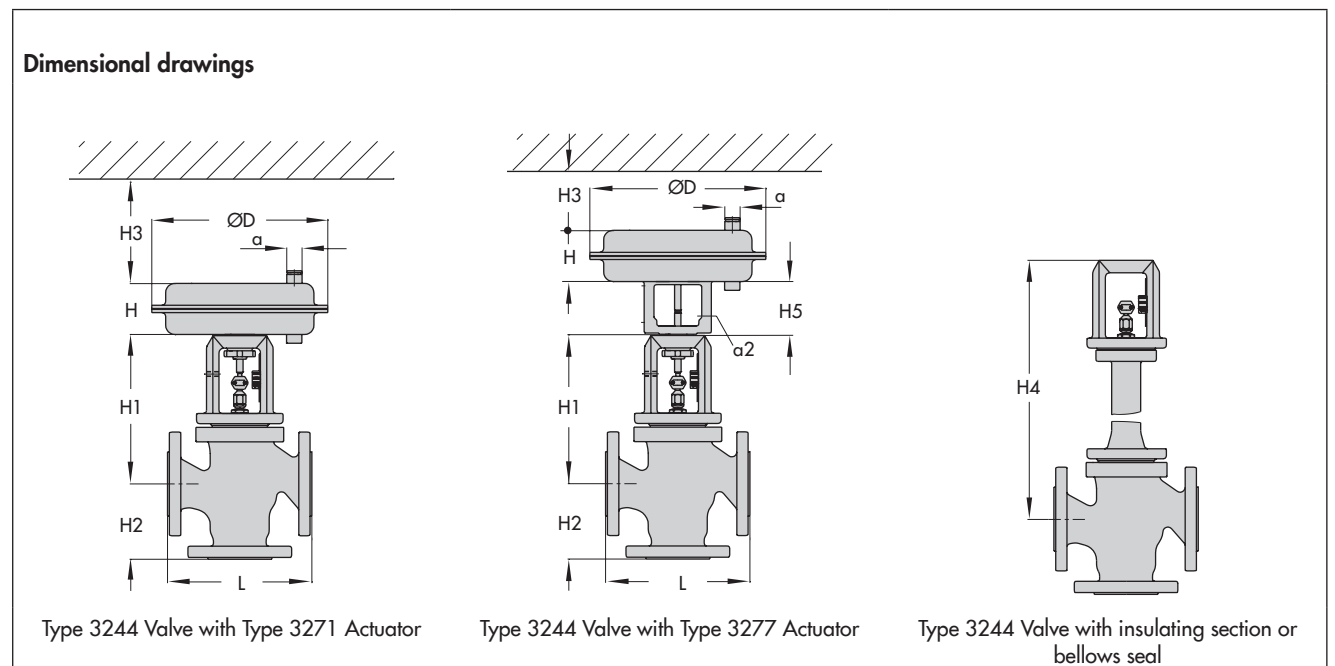
**Table 6: Weights**

**Table 6.1: Type 3244 Valve**

| Valve                  | DN                                      | 15  | 20   | 25   | 32   | 40   | 50   | 65   | 80 | 100 | 125 | 150 |     |
|------------------------|---|-----|------|------|------|------|------|------|----|-----|-----|-----|-----|
|                        | NPS                                     | ½   | ¾    | 1    | –    | 1½   | 2    | 2½   | 3  | 4   | –   | 6   |     |
| Valve without actuator | kg                                      | 6   | 7    | 8    | 13   | 15   | 17   | 31   | 37 | 49  | 95  | 135 |     |
|                        | lbs                                     | 13  | 15.5 | 17.5 | 28.7 | 33   | 37.5 | 68   | 82 | 108 | 210 | 298 |     |
| Weight with            | Insulating section or bellows seal      | kg  | 9    | 10   | 11   | 19   | 21   | 23   | 40 | 45  | 68  | 120 | 165 |
|                        |   | lbs | 20   | 22   | 24   | 42   | 46.3 | 50.7 | 88 | 99  | 150 | 265 | 364 |
|                        | Long insulating section or bellows seal | kg  | 13   | 14   | 15   | 23   | 25   | 27   | 44 | 49  | 76  | 128 | 173 |
|                        |   | lbs | 28.7 | 30.9 | 33   | 50.7 | 55   | 59.5 | 97 | 108 | 168 | 282 | 382 |

**Table 6.2: Type 3271 and Type 3277 Actuators**

| Actuator                                     | cm <sup>2</sup> | 120  | 175v2 | 350  | 355v2 | 700   | 750v2  |      |
|--|-----------------|------|-------|------|-------|-------|--------|------|
|  | in <sup>2</sup> | 18.6 | 27.13 | 54.2 | 55.03 | 108.5 | 116.25 |      |
| Weight for Type 3271 without/with hand-wheel | Without         | kg   | 2.5   | 6    | 8     | 15    | 22     | 36   |
|  |                 | lbs  | 4.4   | 13.2 | 18    | 33.1  | 48.5   | 79.4 |
|  | With            | kg   | –     | 10   | 13    | 20    | 27     | 41   |
|  |                 | lbs  | –     | 22   | 29    | 44.1  | 59.5   | 90.4 |
| Weight for Type 3277 without/with hand-wheel | Without         | kg   | 3.2   | 10   | 12    | 19    | 26     | 40   |
|  |                 | lbs  | 7.1   | 22   | 26.5  | 41.9  | 57.5   | 88.2 |
|  | With            | kg   | –     | 14   | 17    | 24    | 31     | 45   |
|  |                 | lbs  | –     | 30.9 | 37.5  | 52.9  | 68     | 99.2 |



## Ordering text

|                           |   |
|---------------------------|---|
| Mixing or diverting valve |   |
| Valve size                | DN .../NPS ...  |
| Nominal pressure          | PN .../Class ...  |
| Body material             | According to Table 2  |
| Actuator                  | Type 3271 or Type 3277  |
| Fail-safe position        | Actuator stem extends or retracts   |
| Process medium            |   |
| Density                   | in kg/m <sup>3</sup> or lb/ft <sup>3</sup>  |
| Temperature               | in °C or °F   |
| Flow rate                 | kg/h or cu. ft/min in standard or operating state   |
| Upstream pressure         | p <sub>1</sub> in bar or psi<br>(absolute pressure p <sub>abs</sub> )   |
| Downstream pressure       | p <sub>2</sub> in bar or psi<br>(absolute pressure p <sub>abs</sub> )<br>with minimum, normal and maximum flow rate |
| Valve accessories         | Positioner and/or limit switch  |



Note: The temperature limits for DIN and ANSI versions are not directly converted temperatures.