

## Series 240

# Type 3241-1 and Type 3241-7 Pneumatic Control Valves Type 3241 Globe Valve

ANSI version

SAMSON

### Application

Control valve for process engineering and industrial applications

|                 |                                   |
|-----------------|-----------------------------------|
| Valve size      | NPS ½ to 12                       |
| Pressure rating | Class 125 to 300                  |
| Temperatures    | –325 to +842 °F (–196 to +450 °C) |



Type 3241 Globe Valve operated with

- Type 3271 Pneumatic Actuator (Type 3241-1 Control Valve)
- Type 3277 Pneumatic Actuator (Type 3241-7 Control Valve)

Valve body made of

- Cast iron
- Cast steel, cast stainless steel or cast cold-resisting steel
- Forged steel or forged stainless steel
- Special materials

Undivided valve bonnet up to NPS 6

Valve plug

- Metal seal
- Soft seal
- High-performance metal seal

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 60534-6-1 and NAMUR recommendation. Refer to Information Sheet ► T 8350 for more details.

### Versions

**Standard version** for temperatures ranging from –15 to 430 °F (–10 to +220 °C)

- **Type 3241-1** (Fig. 1, Fig. 3) · NPS ½ to 12 · With Type 3271 Pneumatic Actuator (see Data Sheets ► T 8310-1, ► T 8310-2, and ► T 8310-3)
- **Type 3241-7** (Fig. 2, Fig. 4) · NPS ½ to 6 · With Type 3277 Pneumatic Actuator for integral positioner attachment (see Data Sheet ► T 8310-1)

### Further versions

- **NPT threaded connections** (Fig. 3) · NPS ½ to 2, Class 250
- **Adjustable packing** · See Information Sheet ► T 8000-1
- **Flow divider or AC-1/AC-2 Trim** for noise reduction · See Data Sheets ► T 8081 and ► T 8082
- **Valve plug with pressure balancing** · See Technical data
- **Insulating section or bellows seal** · See Technical data
- **Heating jacket** · On request
- **Stainless steel actuator** · See Data Sheet ► T 8310-1



Fig. 1: Type 3241-1  
NPS ½ to 12



Fig. 2: Type 3241-7  
NPS ½ to 6



Fig. 3: Type 3241-1  
with NPT thread



Fig. 4: Type 3241-7  
NPS ½ to 3,  
forged steel

- **Additional handwheel** · See Data Sheets ► T 8310-1, ► T 8310-2, and ► T 8310-3
- **Type 3241 PSA** · Version for pressure swing adsorption plants · See Data Sheets ► T 8012-1 and ► T 8015-1
- **Typetested version** · For heating systems (► T 8016) or DIN/DVGW-tested version for gas (► T 8020)
- **DIN version** (► T 8015)

- **JIS version** with dimensions according to Japanese Industry Standard (JIS) (► T 8012-2)
- **NACE version for sour gas applications** · On request

#### Principle of operation

The medium flows through the valve in the direction indicated by the arrow. The valve plug position determines the cross-sectional area between the seat and plug.

#### Fail-safe position

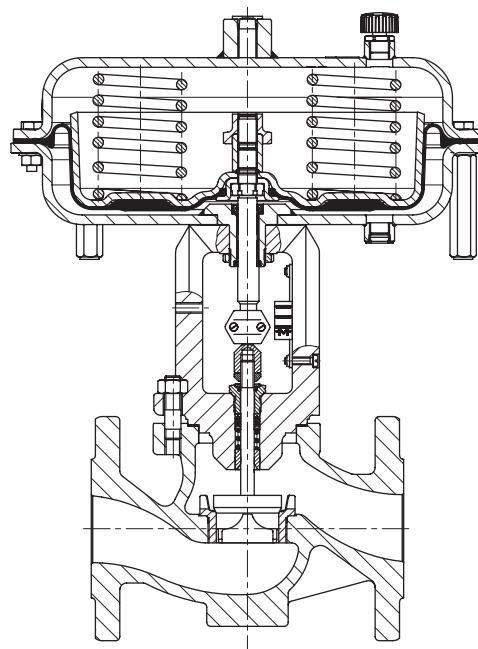
Depending on how the springs are arranged in the pneumatic actuator (see Data Sheets ► T 8310-1, ► T 8310-2, and ► T 8310-3), the valve has two different fail-safe positions effective upon air supply failure:

- **Actuator stem extends (fail-close)**  
The valve closes when the supply air fails.
- **Actuator stem retracts (fail-open)**  
The valve opens when the supply air fails.

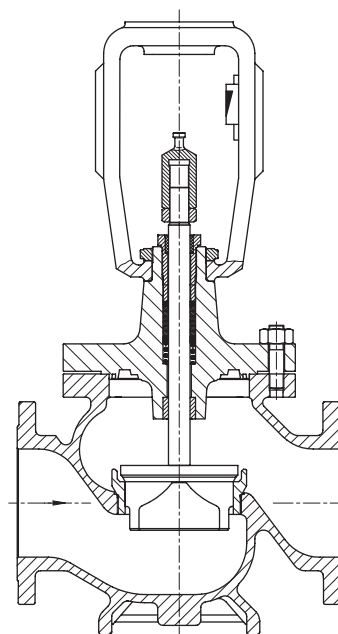
#### Differential pressures

Permissible differential pressures are listed in Information Sheet ► T 8000-4.

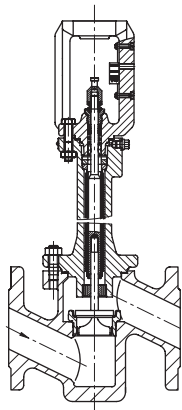
Fig. 5 to Fig. 8 show configuration examples.



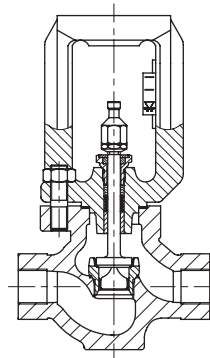
**Fig. 5:** Type 3241-1 Control Valve, NPS ½ to 6, with Type 3271 Actuator



**Fig. 6:** Type 3241 Valve, NPS 8 to 12



**Fig. 7:** Type 3241 Valve, forged steel version, NPS ½ to 3, with bellows seal



**Fig. 8:** Type 3241 Valve, NPS ½ to 2 with NPT thread

**Table 1:** Technical data

| Valve size                                                                                                                              |                              | NPS                   | 1 to 6                                                                                                                                    | ½ to 2                       | ½ to 12                                                          |                                      |                                |                                     | ½, 1, 1½, 2, 3 <sup>2)</sup>   |                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------|--------------------------------------|--------------------------------|-------------------------------------|--------------------------------|------------------------------------------|
| ASTM material                                                                                                                           |                              |                       | Cast iron<br>A 126 B                                                                                                                      |                              | Cast steel<br>A216 WCC                                           | Cast stainless<br>steel<br>A351 CF8M | Cast steel<br>A352 LCC         | Cast stainless<br>steel<br>A351 CF8 | Forged steel<br>A105           | Forged stain-<br>less steel<br>A182 F316 |
| Pressure rating                                                                                                                         |                              | Class                 | 125                                                                                                                                       | 250                          | 150/300                                                          |                                      |                                |                                     | 300                            |                                          |
|                                                                                                                                         |                              | Flanges               | FF                                                                                                                                        | –                            | RF <sup>1)</sup>                                                 |                                      |                                |                                     | RF <sup>1)</sup>               |                                          |
| Type of<br>connection                                                                                                                   | Welding ends                 |                       | –                                                                                                                                         | –                            | DIN EN 12627<br>Fig. 2 Only for NPS 1, 1½, 2, 3, 4, 6, 8, 10, 12 |                                      |                                |                                     | –                              |                                          |
|                                                                                                                                         | Thread                       |                       | –                                                                                                                                         | NPT                          | –                                                                |                                      |                                |                                     | –                              |                                          |
| Seat-plug seal                                                                                                                          |                              |                       | Metal seal · Soft seal · High-performance metal seal                                                                                      |                              |                                                                  |                                      |                                |                                     |                                |                                          |
| Characteristic                                                                                                                          |                              |                       | Equal percentage · Linear (according to Information Sheet ► T 8000-3)                                                                     |                              |                                                                  |                                      |                                |                                     |                                |                                          |
| Rangeability                                                                                                                            |                              |                       | 50:1 for NPS ½ to 2 · 30:1 for NPS 2½ to 6 · 50:1 for NPS 8 and larger                                                                    |                              |                                                                  |                                      |                                |                                     |                                |                                          |
| Heating jacket                                                                                                                          |                              |                       | Class 150                                                                                                                                 |                              |                                                                  |                                      |                                |                                     |                                |                                          |
| Compliance                                                                                                                              |                              |                       | CE · EAC                                                                                                                                  |                              |                                                                  |                                      |                                |                                     |                                |                                          |
| Temperature ranges in °C (°F) · Permissible operating pressures acc. to pressure-temperature diagram (see Information Sheet ► T 8000-2) |                              |                       |                                                                                                                                           |                              |                                                                  |                                      |                                |                                     |                                |                                          |
| Body without insulating section                                                                                                         |                              |                       | –10 to +220 °C (15 to 430 °F)                                                                                                             |                              |                                                                  |                                      |                                |                                     |                                |                                          |
| Body<br>with                                                                                                                            | Insulat-<br>ing sec-<br>tion | Short in °C (°F)      | –29 to +232<br>(–20 to +449)                                                                                                              | –29 to +427<br>(–20 to +800) | –50 to +450<br>(–58 to +842)                                     | –46 to +343<br>(–50 to +650)         | –50 to +300<br>(–58 to +572)   | –29 to +427<br>(–20 to +800)        | –50 to +450<br>(–58 to +842)   |                                          |
|                                                                                                                                         |                              | Long in °C (°F)       | –                                                                                                                                         | –                            | –196 to +450<br>(–325 to +842)                                   | –                                    | –196 to +300<br>(–325 to +572) | –                                   | –196 to +450<br>(–325 to +842) |                                          |
|                                                                                                                                         | Bellows<br>seal              | Short in °C (°F)      | –29 to +232<br>(–20 to +449)                                                                                                              | –29 to +427<br>(–20 to +800) | –50 to +427<br>(–58 to +800)                                     | –46 to +343<br>(–50 to +650)         | –50 to +300<br>(–58 to +572)   | –29 to +427<br>(–20 to +800)        | –50 to +450<br>(–58 to +842)   |                                          |
|                                                                                                                                         |                              | Long in °C (°F)       | –                                                                                                                                         | –                            | –196 to +427<br>(–325 to +800)                                   | –                                    | –196 to +300<br>(–325 to +572) | –                                   | –196 to +450<br>(–325 to +842) |                                          |
| Valve<br>plug                                                                                                                           | Stan-<br>dard                | Metal seal            | –196 to +450 °C (–325 to +842 °F)                                                                                                         |                              |                                                                  |                                      |                                |                                     |                                |                                          |
|                                                                                                                                         |                              | Soft seal             | –196 to +220 °C (–325 to +428 °F)                                                                                                         |                              |                                                                  |                                      |                                |                                     |                                |                                          |
|                                                                                                                                         | Balanced                     | With PTFE ring        | –50 to +220 °C (–58 to +428 °F) · Lower temperatures on request                                                                           |                              |                                                                  |                                      |                                |                                     |                                |                                          |
|                                                                                                                                         |                              | With graphite<br>ring | 220 to 450 °C (428 to 842 °F)                                                                                                             |                              |                                                                  |                                      |                                |                                     |                                |                                          |
| Leakage class according to ANSI/FCI 70-2                                                                                                |                              |                       |                                                                                                                                           |                              |                                                                  |                                      |                                |                                     |                                |                                          |
| Valve<br>plug                                                                                                                           | Stan-<br>dard                | Metal seal            | Standard: IV · High-performance metal seal: V                                                                                             |                              |                                                                  |                                      |                                |                                     |                                |                                          |
|                                                                                                                                         |                              | Soft seal             | VI                                                                                                                                        |                              |                                                                  |                                      |                                |                                     |                                |                                          |
|                                                                                                                                         | Balanced                     | Metal seal            | Standard IV · With PTFE or graphite balancing ring<br>Special version V · For high-performance (only with PTFE balancing ring) on request |                              |                                                                  |                                      |                                |                                     |                                |                                          |

<sup>1)</sup> Other versions on request

<sup>2)</sup> NPS 3 only in A 105

**Table 2: Materials**

| Valve body <sup>1)</sup> | Cast iron<br>A 126 B                                           | Cast steel<br>A216 WCC | Cast stainless<br>steel<br>A351 CF8M | Cast steel<br>A352 LCC                               | Cast stainless<br>steel<br>A351 CF8 | Forged steel<br>A105                                 | Forged<br>stainless steel<br>A182 F316 |
|--------------------------|----------------------------------------------------------------|------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|------------------------------------------------------|----------------------------------------|
| Valve bonnet             | A105/<br>A 126 B                                               | A105/<br>A216 WCC      | A182 F316<br>A351 CF8M               | A350 LF2<br>A352 LCC                                 | A182 F304<br>A351 CF8               | A105                                                 | A182 F316/<br>A182 F316L               |
| Seat <sup>2)</sup>       | Cr steel UNS S41000/1.4008                                     |                        | A 182 F316L/<br>A 351 CF3M           | Cr steel<br>UNS S41000/<br>1.4008                    | A182 F304/<br>A 351 CF8             | Cr steel<br>UNS S41000/<br>1.4008                    | A182 F316L/<br>A351 CF3M               |
| Plug <sup>2)</sup>       | Cr steel UNS S41000<br>(A182 F316L)/1.4008                     |                        | A 182 F316L/<br>A 351 CF3M           | Cr steel<br>UNS S41000<br>(A182<br>F316L)/<br>1.4008 | A182 F304/<br>A351 CF8              | Cr steel<br>UNS S41000<br>(A182<br>F316L)/<br>1.4008 | A182 F316L/<br>A351 CF3M               |
| Plug seal                | Seal ring for soft-seated plug: PTFE with glass fiber          |                        |                                      |                                                      |                                     |                                                      |                                        |
|                          | Seal ring for balanced plug: PTFE with carbon or graphite ring |                        |                                      |                                                      |                                     | –                                                    |                                        |
| Guide bushings           | A 582 430 F                                                    |                        | 316L/<br>A182 F316L                  | 316L/<br>A182 F316L                                  | A182 F304                           | A 582 430F                                           | 316L/<br>A182 F316L                    |
| Packing <sup>3)</sup>    | V-ring packing: PTFE with carbon · Spring: A479 302            |                        |                                      |                                                      |                                     |                                                      |                                        |
| Body gasket              | Graphite on metal core                                         |                        |                                      |                                                      |                                     |                                                      |                                        |
| Insulating section       | A105                                                           | A105                   | A182 F316/<br>A182 F316L             | A350 LF2                                             | A182 F304                           | A105                                                 | A182 F316/<br>A182 F316L               |
| Metal bellows seal       |                                                                |                        |                                      |                                                      |                                     |                                                      |                                        |
| Intermediate<br>piece    | A105                                                           | A105                   | A182 F316/<br>A182 F316L             | A350 LF2                                             | A182 F304                           | A105                                                 | A182 F316/<br>A182 F316L               |
| Metal bellows            | 1.4571 <sup>4)</sup>                                           |                        |                                      |                                                      | A182 F321                           | 1.4571                                               |                                        |
| Heating jacket           | –                                                              | A182 F316L             |                                      |                                                      |                                     |                                                      |                                        |

<sup>1)</sup> Special materials for applications with sea water: N 08904, duplex A 995 4 A; nickel-based alloy: A 494 LW-21M; other special materials on request

<sup>2)</sup> Seats and metal-seated plug also with Stellite® facing; for ≤ NPS 4 plug up to seat bore 38 made of solid Stellite® available.

<sup>3)</sup> Other packings on request (► T 8000-1)

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

**Ordering text**

|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Globe valve        | Type 3241                                                           |
| Valve size         | NPS ...                                                             |
| Pressure rating    | Class ...                                                           |
| Body material      | According to Table 2                                                |
| Type of connection | Flanges (RF or FF), welding ends or NPT thread                      |
| Seat-plug seal     | Soft seal, metal seal or high-performance metal seal                |
| Characteristic     | Equal percentage or linear                                          |
| Pneumatic actuator | Type 3271 or Type 3277                                              |
| Fail-safe position | Fail-close or fail-open                                             |
| Process medium     | Density and temperature                                             |
| Max. flow rate     | in kg/h or m <sup>3</sup> /h                                        |
| Pressure           | p <sub>1</sub> and p <sub>2</sub> in bar or psi (absolute pressure) |
| Valve accessories  | Positioner and/or limit switch                                      |

**Table 3:**  $C_V$  and  $K_{VS}$  coefficients

Terms for control valve sizing according to IEC 60534, Parts 2-1 and 2-2:  $F_L = 0.95$ ,  $X_T = 0.75$

Conversion of flow coefficients:  $C_V$  (US gallons/min.) =  $1.17 \times K_{VS}$  (m<sup>3</sup>/h) or  $K_{VS}/C_V = 0.865$

**Table 3.1:** Overview with flow divider ST 1 ( $C_{V1}/K_{VS1}$ ), ST 2 ( $C_{V2}/K_{VS2}$ ) and ST 3 ( $C_{V3}/K_{VS3}$ )

|                  |      |      |      |     |      |     |      |      |     |     |       |      |    |      |     |     |      |      |      |      |      |      |      |      |      |      |      |
|------------------|------|------|------|-----|------|-----|------|------|-----|-----|-------|------|----|------|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| C <sub>v</sub>   | 0.12 | 0.2  | 0.3  | 0.5 | 0.75 | 1.2 | 2    | 3    | 5   | 7.5 | 12    | 20   | 30 | 47   | 70  | 95  | 75   | 120  | 190  | 300  | 290  | 420  | 735  | 1150 | 1730 |      |      |
| K <sub>VS</sub>  | 0.1  | 0.16 | 0.25 | 0.4 | 0.63 | 1.0 | 1.6  | 2.5  | 4.0 | 6.3 | 10    | 16   | 25 | 40   | 60  | 80  | 63   | 100  | 160  | 260  | 250  | 360  | 630  | 1000 | 1500 |      |      |
| C <sub>v1</sub>  | –    | –    | –    | –   | –    | –   | 1.7  | 2.6  | 4.2 | 7   | 10.5  | 17   | 26 | 42   | 62  | 85  | 67   | 105  | 170  | 275  | 265  | 375  | 650  | 1040 | 1560 |      |      |
| K <sub>VS1</sub> | –    | –    | –    | –   | –    | –   | 1.45 | 2.2  | 3.6 | 5.7 | 9     | 14.5 | 22 | 36   | 54  | 72  | 57   | 90   | 144  | 234  | 225  | 320  | 560  | 900  | 1350 |      |      |
| C <sub>v2</sub>  | –    | –    | –    | –   | –    | –   | –    | –    | –   | –   | 9.5   | 15   | 23 | 37   | 56  | –   | 60   | 95   | 145  | 245  | 235  | 335  | 580  | 950  | 1400 |      |      |
| K <sub>VS2</sub> | –    | –    | –    | –   | –    | –   | –    | –    | –   | –   | 8     | 13   | 20 | 32   | 48  | –   | 50   | 80   | 125  | 210  | 200  | 290  | 500  | 800  | 1200 |      |      |
| C <sub>v3</sub>  | –    | –    | –    | –   | –    | –   | –    | –    | –   | –   | 9     | 14   | 23 | 35   | –   | –   | 55   | 90   | 140  | –    | 220  | 315  | 560  | 880  | 1280 |      |      |
| K <sub>VS3</sub> | –    | –    | –    | –   | –    | –   | –    | –    | –   | –   | 7.5   | 12   | 20 | 30   | –   | –   | 47   | 75   | 120  | –    | 190  | 270  | 480  | 750  | 1100 |      |      |
| Seat<br>(ØD)     | in   | 0.12 |      |     | 0.24 |     |      | 0.47 |     |     | 0.945 |      |    | 1.22 | 1.5 | 1.9 | 2.48 | 3.15 | 2.48 | 3.15 | 3.94 | 5.12 | 4.92 | 5.91 | 7.87 | 9.84 | 11.8 |
|                  | mm   | 3    |      |     | 6    |     |      | 12   |     |     | 24    |      |    | 31   | 38  | 48  | 63   | 80   | 63   | 80   | 100  | 130  | 125  | 150  | 200  | 250  | 300  |
| Travel           | in   | 0.59 |      |     |      |     |      |      |     |     |       |      |    |      |     |     |      | 1.18 |      |      |      | 2.36 |      |      | 4.72 |      |      |
|                  | mm   | 15   |      |     |      |     |      |      |     |     |       |      |    |      |     |     |      | 30   |      |      |      | 60   |      |      | 120  |      |      |

**Table 3.2:** Versions without flow divider ( $C_V/K_{VS}$ ) · Areas highlighted in gray indicate versions also with pressure balancing

| C <sub>v</sub>  |     | 0.12 | 0.2  | 0.3  | 0.5 | 0.75 | 1.2 | 2   | 3   | 5   | 7.5 | 12 | 20 | 30 | 47 | 70 | 95 | 75 | 120             | 190 | 300 | 290 | 420 | 735 | 1150 | 1730 |  |
|-----------------|-----|------|------|------|-----|------|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|-----------------|-----|-----|-----|-----|-----|------|------|--|
| K <sub>VS</sub> |     | 0.1  | 0.16 | 0.25 | 0.4 | 0.63 | 1.0 | 1.6 | 2.5 | 4.0 | 6.3 | 10 | 16 | 25 | 40 | 60 | 80 | 63 | 100             | 160 | 260 | 250 | 360 | 630 | 1000 | 1500 |  |
| NPS             | DN  |      |      |      |     |      |     |     |     |     |     |    |    |    |    |    |    |    |                 |     |     |     |     |     |      |      |  |
| ½               | 15  | •    | •    | •    | •   | •    | •   | •   | •   | •   |     |    |    |    |    |    |    |    |                 |     |     |     |     |     |      |      |  |
| ¾               | 20  | •    | •    | •    | •   | •    | •   | •   | •   | •   | •   |    |    |    |    |    |    |    |                 |     |     |     |     |     |      |      |  |
| 1               | 25  | •    | •    | •    | •   | •    | •   | •   | •   | •   | •   | •  |    |    |    |    |    |    |                 |     |     |     |     |     |      |      |  |
| 1½              | 40  |      |      |      | •   | •    | •   | •   | •   | •   | •   | •  | •  | •  |    |    |    |    |                 |     |     |     |     |     |      |      |  |
| 2               | 50  |      |      |      | •   | •    | •   | •   | •   | •   | •   | •  | •  | •  | •  |    |    |    |                 |     |     |     |     |     |      |      |  |
| 2½              | 65  |      |      |      |     |      |     |     |     |     |     |    |    |    | •  | •  | •  |    |                 |     |     |     |     |     |      |      |  |
| 3               | 80  |      |      |      |     |      |     |     |     |     |     |    |    |    | •  | •  | •  | •  | • <sup>1)</sup> |     |     |     |     |     |      |      |  |
| 4               | 100 |      |      |      |     |      |     |     |     |     |     |    |    |    |    |    |    | •  | •               | •   | •   |     |     |     |      |      |  |
| 6               | 150 |      |      |      |     |      |     |     |     |     |     |    |    |    |    |    |    | •  | •               | •   | •   | •   |     |     |      |      |  |
| 8               | 200 |      |      |      |     |      |     |     |     |     |     |    |    |    |    |    |    |    | •               | •   |     | •   | •   | •   |      |      |  |
| 10              | 250 |      |      |      |     |      |     |     |     |     |     |    |    |    |    |    |    |    | •               | •   |     | •   | •   | •   | •    |      |  |
| 12              | 300 |      |      |      |     |      |     |     |     |     |     |    |    |    |    |    |    |    |                 | •   |     | •   | •   | •   | •    | •    |  |

<sup>1)</sup> With 19 mm overtravel (not with bellows seal)

**Table 3.3:** Versions with flow divider ST 1 ( $C_{V1}/K_{VS1}$ ) · Areas highlighted in gray indicate versions also with pressure balancing

| $C_{V1}$  | –   |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   | 1.7  | 2.6 | 4.2 | 7   | 10.5 | 17   | 26 | 42 | 62 | 85 | 67 | 105 | 170 | 275 | 265 | 375 | 650 | 1040 | 1560 |
|-----------|-----|--|--|--|--|--|--|---|---|---|---|---|---|---|---|---|------|-----|-----|-----|------|------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|------|------|
| $K_{VS1}$ | –   |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   | 1.45 | 2.2 | 3.6 | 5.7 | 9    | 14.5 | 22 | 36 | 54 | 72 | 57 | 90  | 144 | 234 | 225 | 320 | 560 | 900  | 1350 |
| NPS       | DN  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |      |     |     |     |      |      |    |    |    |    |    |     |     |     |     |     |     |      |      |
| 1/2       | 15  |  |  |  |  |  |  | • | • | • |   |   |   |   |   |   |      |     |     |     |      |      |    |    |    |    |    |     |     |     |     |     |     |      |      |
| 3/4       | 20  |  |  |  |  |  |  | • | • | • |   |   |   |   |   |   |      |     |     |     |      |      |    |    |    |    |    |     |     |     |     |     |     |      |      |
| 1         | 25  |  |  |  |  |  |  | • | • | • |   |   |   |   |   |   |      |     |     |     |      |      |    |    |    |    |    |     |     |     |     |     |     |      |      |
| 1 1/2     | 40  |  |  |  |  |  |  |   |   |   | • | • | • | • |   |   |      |     |     |     |      |      |    |    |    |    |    |     |     |     |     |     |     |      |      |
| 2         | 50  |  |  |  |  |  |  |   |   |   | • | • | • | • | • |   |      |     |     |     |      |      |    |    |    |    |    |     |     |     |     |     |     |      |      |
| 2 1/2     | 65  |  |  |  |  |  |  |   |   |   |   |   | • | • | • |   |      |     |     |     |      |      |    |    |    |    |    |     |     |     |     |     |     |      |      |
| 3         | 80  |  |  |  |  |  |  |   |   |   |   |   | • | • | • | • |      |     |     |     |      |      |    |    |    |    |    |     |     |     |     |     |     |      |      |
| 4         | 100 |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   | •    | •   | •   | •   |      |      |    |    |    |    |    |     |     |     |     |     |     |      |      |
| 6         | 150 |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   | •    | •   | •   | •   | •    |      |    |    |    |    |    |     |     |     |     |     |     |      |      |
| 8         | 200 |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |      | •   | •   |     | •    | •    | •  |    |    |    |    |     |     |     |     |     |     |      |      |
| 10        | 250 |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |      | •   | •   |     | •    | •    | •  | •  |    |    |    |     |     |     |     |     |     |      |      |
| 12        | 300 |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |      |     | •   |     | •    | •    | •  | •  | •  |    |    |     |     |     |     |     |     |      |      |

**Table 3.1:** Overview with flow divider ST 1 ( $C_V1/K_{VS1}$ ), ST 2 ( $C_V2/K_{VS2}$ ) and ST 3 ( $C_V3/K_{VS3}$ )

|                  |      |      |      |     |      |     |      |      |     |     |       |      |    |      |     |     |      |      |      |      |      |      |      |      |      |      |      |
|------------------|------|------|------|-----|------|-----|------|------|-----|-----|-------|------|----|------|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| C <sub>v</sub>   | 0.12 | 0.2  | 0.3  | 0.5 | 0.75 | 1.2 | 2    | 3    | 5   | 7.5 | 12    | 20   | 30 | 47   | 70  | 95  | 75   | 120  | 190  | 300  | 290  | 420  | 735  | 1150 | 1730 |      |      |
| K <sub>VS</sub>  | 0.1  | 0.16 | 0.25 | 0.4 | 0.63 | 1.0 | 1.6  | 2.5  | 4.0 | 6.3 | 10    | 16   | 25 | 40   | 60  | 80  | 63   | 100  | 160  | 260  | 250  | 360  | 630  | 1000 | 1500 |      |      |
| C <sub>v1</sub>  | –    | –    | –    | –   | –    | –   | 1.7  | 2.6  | 4.2 | 7   | 10.5  | 17   | 26 | 42   | 62  | 85  | 67   | 105  | 170  | 275  | 265  | 375  | 650  | 1040 | 1560 |      |      |
| K <sub>VS1</sub> | –    | –    | –    | –   | –    | –   | 1.45 | 2.2  | 3.6 | 5.7 | 9     | 14.5 | 22 | 36   | 54  | 72  | 57   | 90   | 144  | 234  | 225  | 320  | 560  | 900  | 1350 |      |      |
| C <sub>v2</sub>  | –    | –    | –    | –   | –    | –   | –    | –    | –   | –   | 9.5   | 15   | 23 | 37   | 56  | –   | 60   | 95   | 145  | 245  | 235  | 335  | 580  | 950  | 1400 |      |      |
| K <sub>VS2</sub> | –    | –    | –    | –   | –    | –   | –    | –    | –   | –   | 8     | 13   | 20 | 32   | 48  | –   | 50   | 80   | 125  | 210  | 200  | 290  | 500  | 800  | 1200 |      |      |
| C <sub>v3</sub>  | –    | –    | –    | –   | –    | –   | –    | –    | –   | –   | 9     | 14   | 23 | 35   | –   | –   | 55   | 90   | 140  | –    | 220  | 315  | 560  | 880  | 1280 |      |      |
| K <sub>VS3</sub> | –    | –    | –    | –   | –    | –   | –    | –    | –   | –   | 7.5   | 12   | 20 | 30   | –   | –   | 47   | 75   | 120  | –    | 190  | 270  | 480  | 750  | 1100 |      |      |
| Seat<br>(ØD)     | in   | 0.12 |      |     | 0.24 |     |      | 0.47 |     |     | 0.945 |      |    | 1.22 | 1.5 | 1.9 | 2.48 | 3.15 | 2.48 | 3.15 | 3.94 | 5.12 | 4.92 | 5.91 | 7.87 | 9.84 | 11.8 |
|                  | mm   | 3    |      |     | 6    |     |      | 12   |     |     | 24    |      |    | 31   | 38  | 48  | 63   | 80   | 63   | 80   | 100  | 130  | 125  | 150  | 200  | 250  | 300  |
| Travel           | in   | 0.59 |      |     |      |     |      |      |     |     |       |      |    |      |     |     |      | 1.18 |      |      |      | 2.36 |      |      | 4.72 |      |      |
|                  | mm   | 15   |      |     |      |     |      |      |     |     |       |      |    |      |     |     |      | 30   |      |      |      | 60   |      |      | 120  |      |      |

**Table 3.4:** Versions with flow divider ST 2 ( $C_V2/K_{VS2}$ ) · Areas highlighted in gray indicate versions also with pressure balancing

| $C_V2$    | –   |  |  |  |  |  |  |  |  |  | 9.5 | 15 | 23 | 37 | 56 | – | 60 | 95 | 145 | 245 | 235 | 335 | 580 | 950 | 1400 |
|-----------|-----|--|--|--|--|--|--|--|--|--|-----|----|----|----|----|---|----|----|-----|-----|-----|-----|-----|-----|------|
| $K_{VS2}$ | –   |  |  |  |  |  |  |  |  |  | 8   | 13 | 20 | 32 | 48 | – | 50 | 80 | 125 | 210 | 200 | 290 | 500 | 800 | 1200 |
| NPS       | DN  |  |  |  |  |  |  |  |  |  |     |    |    |    |    |   |    |    |     |     |     |     |     |     |      |
| ½         | 15  |  |  |  |  |  |  |  |  |  |     |    |    |    |    |   |    |    |     |     |     |     |     |     |      |
| ¾         | 20  |  |  |  |  |  |  |  |  |  |     |    |    |    |    |   |    |    |     |     |     |     |     |     |      |
| 1         | 25  |  |  |  |  |  |  |  |  |  |     |    |    |    |    |   |    |    |     |     |     |     |     |     |      |
| 1½        | 40  |  |  |  |  |  |  |  |  |  | •   | •  | •  |    |    |   |    |    |     |     |     |     |     |     |      |
| 2         | 50  |  |  |  |  |  |  |  |  |  | •   | •  | •  |    |    |   |    |    |     |     |     |     |     |     |      |
| 2½        | 65  |  |  |  |  |  |  |  |  |  |     |    | •  | •  | •  |   |    |    |     |     |     |     |     |     |      |
| 3         | 80  |  |  |  |  |  |  |  |  |  |     |    | •  | •  | •  |   |    |    |     |     |     |     |     |     |      |
| 4         | 100 |  |  |  |  |  |  |  |  |  |     |    |    |    |    |   | •  | •  | •   |     |     |     |     |     |      |
| 6         | 150 |  |  |  |  |  |  |  |  |  |     |    |    |    |    |   | •  | •  | •   | •   |     |     |     |     |      |
| 8         | 200 |  |  |  |  |  |  |  |  |  |     |    |    |    |    |   |    | •  | •   |     | •   | •   | •   |     |      |
| 10        | 250 |  |  |  |  |  |  |  |  |  |     |    |    |    |    |   |    | •  | •   |     | •   | •   | •   | •   |      |
| 12        | 300 |  |  |  |  |  |  |  |  |  |     |    |    |    |    |   |    |    | •   |     | •   | •   | •   | •   | •    |

**Table 3.5:** Versions with flow divider ST 3 ( $C_V3/K_{VS3}$ ) · Areas highlighted in gray indicate versions also with pressure balancing

| $C_V3$    | –   |  |  |  |  |  |  |  |  |  | 9               | 14 | 23 | 35 | – | – | 55 | 90 | 140 | – | 220 | 315 | 560 | 880 | 1280 |
|-----------|-----|--|--|--|--|--|--|--|--|--|-----------------|----|----|----|---|---|----|----|-----|---|-----|-----|-----|-----|------|
| $K_{VS3}$ | –   |  |  |  |  |  |  |  |  |  | 7.5             | 12 | 20 | 30 | – | – | 47 | 75 | 120 | – | 190 | 270 | 480 | 750 | 1100 |
| NPS       | DN  |  |  |  |  |  |  |  |  |  |                 |    |    |    |   |   |    |    |     |   |     |     |     |     |      |
| ½         | 15  |  |  |  |  |  |  |  |  |  |                 |    |    |    |   |   |    |    |     |   |     |     |     |     |      |
| ¾         | 20  |  |  |  |  |  |  |  |  |  |                 |    |    |    |   |   |    |    |     |   |     |     |     |     |      |
| 1         | 25  |  |  |  |  |  |  |  |  |  |                 |    |    |    |   |   |    |    |     |   |     |     |     |     |      |
| 1½        | 40  |  |  |  |  |  |  |  |  |  |                 |    |    |    |   |   |    |    |     |   |     |     |     |     |      |
| 2         | 50  |  |  |  |  |  |  |  |  |  | • <sup>1)</sup> |    |    |    |   |   |    |    |     |   |     |     |     |     |      |
| 2½        | 65  |  |  |  |  |  |  |  |  |  |                 | •  | •  | •  |   |   |    |    |     |   |     |     |     |     |      |
| 3         | 80  |  |  |  |  |  |  |  |  |  |                 | •  | •  | •  |   |   |    |    |     |   |     |     |     |     |      |
| 4         | 100 |  |  |  |  |  |  |  |  |  |                 |    |    |    |   |   | •  |    |     |   |     |     |     |     |      |
| 6         | 150 |  |  |  |  |  |  |  |  |  |                 |    |    |    |   |   | •  | •  | •   |   |     |     |     |     |      |
| 8         | 200 |  |  |  |  |  |  |  |  |  |                 |    |    |    |   |   |    | •  | •   |   | •   | •   |     |     |      |
| 10        | 250 |  |  |  |  |  |  |  |  |  |                 |    |    |    |   |   |    | •  | •   | • |     | •   | •   | •   |      |
| 12        | 300 |  |  |  |  |  |  |  |  |  |                 |    |    |    |   |   |    |    | •   |   | •   | •   | •   | •   | •    |

<sup>1)</sup> Not with bellows seal or insulating section

**Table 4:** Dimensions and weights for standard version of Type 3241-1 and Type 3241-7 Valves with flanges or welding ends**Table 4.1:** Dimensions for Type 3241 Valve, up to NPS 6 · Without actuator · Dimensions in inch and mm

| Valve                  |                                                  | NPS | ½     | ¾     | 1     | 1½    | 2     | 2½    | 3     | 4     | 6     |
|------------------------|--------------------------------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                        |                                                  | DN  | 15    | 20    | 25    | 40    | 50    | 65    | 80    | 100   | 150   |
|                        |                                                  | NPT | ½     | ¾     | 1     | 1½    | 2     | –     | –     | –     | –     |
| Length L <sup>1)</sup> | Class 125 and 150                                | in  | 7.25  | 7.25  | 7.25  | 8.75  | 10.0  | 10.88 | 11.75 | 13.88 | 17.75 |
|                        |                                                  | mm  | 184   | 184   | 184   | 222   | 254   | 276   | 298   | 352   | 451   |
|                        | Class 300                                        | in  | 7.50  | 7.62  | 7.75  | 9.25  | 10.50 | 11.50 | 12.50 | 14.50 | 18.62 |
|                        |                                                  | mm  | 190   | 194   | 197   | 235   | 267   | 292   | 318   | 368   | 473   |
| Length L1              | Class 250                                        | in  | 6     | 6     | 6     | 8     | 9.25  | –     | –     | –     | –     |
|                        |                                                  | mm  | 152.4 | 152.4 | 152.4 | 203.2 | 235   | –     | –     | –     | –     |
| H1 for actuator        | ≤750v2 cm <sup>2</sup>                           | in  | 8.74  |       |       | 8.78  |       | 10.31 |       | 13.94 | 15.35 |
|                        |                                                  | mm  | 222   |       |       | 223   |       | 262   |       | 354   | 390   |
|                        | 1000 cm <sup>2</sup><br>1400-60 cm <sup>2</sup>  | in  | –     |       |       |       |       |       |       | 16.26 | 17.72 |
|                        |                                                  | mm  |       |       |       |       |       |       |       | 413   | 450   |
|                        | 1400-120 cm <sup>2</sup><br>2800 cm <sup>2</sup> | in  | –     |       |       |       |       |       |       |       |       |
|                        |                                                  | mm  |       |       |       |       |       |       |       |       |       |

|                |              |    |      |      |      |      |      |      |      |      |      |
|----------------|--------------|----|------|------|------|------|------|------|------|------|------|
| H2 for version | Cast steel   | in | 1.73 | 1.73 | 1.73 | 2.83 | 2.83 | 3.86 | 3.86 | 4.65 | 6.89 |
|                |              | mm | 44   | 44   | 44   | 72   | 72   | 98   | 98   | 118  | 175  |
|                | Forged steel | in | 2.1  | –    | 2.76 | 3.62 | 3.86 | –    | 5.05 | –    | –    |
|                |              | mm | 53   | –    | 70   | 92   | 98   | –    | 128  | –    | –    |

<sup>1)</sup> Face-to-face dimensions according to ANSI/ISA 75.08.01

**Table 4.2:** Dimensions for Type 3241 Valve, NPS 8 and larger · Without actuator · Dimensions in inch and mm

| Valve                         |                                                  | NPS | 8     | 10            | 10                               | 10                                    | 12    |
|-------------------------------|--------------------------------------------------|-----|-------|---------------|----------------------------------|---------------------------------------|-------|
|                               |                                                  | DN  | 200   | 250/cast iron | 250<br>up to 200 mm seat<br>bore | 250<br>seat bore 250 mm<br>and larger | 300   |
| Length L <sup>1)</sup>        | Class 125 and 150                                | in  | 21.38 | 26.50         | 26.50                            | 26.50                                 | 29.00 |
|                               |                                                  | mm  | 543   | 673           | 673                              | 673                                   | 737   |
|                               | Class 300                                        | in  | 22.38 | 27.88         | 27.88                            | 27.88                                 | 30.50 |
|                               |                                                  | mm  | 568   | 708           | 708                              | 708                                   | 775   |
| H4                            |                                                  | in  | 15.35 | 15.35         | 17.76                            | 17.76                                 | 25.67 |
|                               |                                                  | mm  | 390   | 390           | 451                              | 451                                   | 652   |
| H8 <sup>2)</sup> for actuator | 1000 cm <sup>2</sup><br>1400-60 cm <sup>2</sup>  | in  | 16.46 | 16.46         | 16.46                            | 19.80                                 | 19.80 |
|                               |                                                  | mm  | 418   | 418           | 418                              | 503                                   | 503   |
|                               | 1400-120 cm <sup>2</sup><br>2800 cm <sup>2</sup> | in  | 19.80 | 19.80         | 19.80                            | 25.59                                 | 25.59 |
|                               |                                                  | mm  | 503   | 503           | 503                              | 650                                   | 650   |
| H2                            |                                                  | in  | 9.65  | 10.63         | 12.20                            | 12.20                                 | 14.57 |
|                               |                                                  | mm  | 245   | 270           | 310                              | 310                                   | 370   |

<sup>1)</sup> Face-to-face dimensions according to ANSI/ISA 75.08.01

<sup>2)</sup> H8 increases by 170 mm for valves with K<sub>VS</sub> 250, 360 or 630 and 60 mm rated travel operating with overtravel.

**Table 4.3:** Dimensions for Type 3271 and Type 3277 Pneumatic Actuators · Dimensions in inch and mm

| Actuator area    | cm <sup>2</sup> | 120            | 175v2          | 240            | 350            | 355v2          | 700            | 750v2          | 1000           | 1400-60        | 1400-120       | 2800           |
|------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Diaphragm ØD     | in              | 6.61           | 8.46           | 9.45           | 11.02          | 11.02          | 15.35          | 15.51          | 18.19          | 20.87          | 21.02          | 30.32          |
|                  | mm              | 168            | 215            | 240            | 280            | 280            | 390            | 394            | 462            | 530            | 534            | 770            |
| H <sup>1)</sup>  | in              | 2.71           | 3.07           | 2.44           | 3.23           | 4.76           | 7.83           | 9.29           | 15.87          | 13.27          | 23.54          | 28.07          |
|                  | mm              | 69             | 78             | 62             | 82             | 121            | 199            | 236            | 403            | 337            | 598            | 713            |
| H3 <sup>2)</sup> | in              | 4.33           | 4.33           | 4.33           | 4.33           | 4.33           | 7.48           | 7.48           | 24.02          | 24.02          | 25.59          | 25.59          |
|                  | mm              | 110            | 110            | 110            | 110            | 110            | 190            | 190            | 610            | 610            | 650            | 650            |
| H5               | Type 3277 in    | 3.46           | 3.98           | 3.98           | 3.98           | 3.98           | 3.98           | 3.98           | –              | –              | –              | –              |
|                  | Type 3277 mm    | 88             | 101            | 101            | 101            | 101            | 101            | 101            | –              | –              | –              | –              |
| Thread           | Type 3271       | M30 x 1.5      |                |                |                |                |                |                | M60 x 1.5      |                | M100 x 2       |                |
|                  | Type 3277       | M30 x 1.5      |                |                |                |                |                |                | –              | –              | –              | –              |
| α                | Type 3271       | G ½<br>(½ NPT) | G ¼<br>(¼ NPT) | G ¼<br>(¼ NPT) | G ¾<br>(¾ NPT) | G ¾<br>(¾ NPT) | G ¾<br>(¾ NPT) | G ¾<br>(¾ NPT) | G ¾<br>(¾ NPT) | G ¾<br>(¾ NPT) | G 1<br>(1 NPT) | G 1<br>(1 NPT) |
| α2               | Type 3277       | –              | G ¾            | G ¾            | G ¾            | G ¾            | G ¾            | G ¾            | –              | –              | –              | –              |

<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 4.4:** Weights for Type 3241-1 and Type 3241-7 · Weights in lbs and kg

| Valve                   | NPS | ½  | ¾  | 1  | 1½ | 2  | 2½ | 3  | 4   | 6   | 8    | 10   | 12   |
|-------------------------|-----|----|----|----|----|----|----|----|-----|-----|------|------|------|
|                         | mm  | 15 | 20 | 25 | 40 | 50 | 65 | 80 | 100 | 150 | 200  | 250  | 300  |
| Weight without actuator | lbs | 15 | 18 | 20 | 35 | 44 | 71 | 82 | 137 | 287 | 1096 | 1892 | 2535 |
|                         | kg  | 7  | 8  | 9  | 16 | 20 | 32 | 37 | 62  | 130 | 497  | 858  | 1150 |

| Actuator  |                   |                | cm <sup>2</sup> | 120 | 175v2 | 240 | 350 | 355v2 | 700 | 750v2 | 1000 | 1400-60 | 1400-120 | 2800 |
|-----------|-------------------|----------------|-----------------|-----|-------|-----|-----|-------|-----|-------|------|---------|----------|------|
| Type 3271 | Without handwheel | lbs            | 6               | 13  | 11    | 18  | 33  | 49    | 79  | 176   | 154  | 386     | 992      |      |
|           |                   | kg             | 2.5             | 6   | 5     | 8   | 15  | 22    | 36  | 80    | 70   | 175     | 450      |      |
|           | With hand-wheel   | Travel ≤80 mm  | lbs             | 9   | 22    | 20  | 29  | 51    | 60  | 90    | 397  | 386     | 661      | 1268 |
|           |                   |                | kg              | 4   | 10    | 9   | 13  | 23    | 27  | 41    | 180  | 175     | 300      | 575  |
|           |                   | Travel ≤160 mm | lbs             | –   | –     | –   | –   | –     | –   | –     | –    | –       | 937      | 1543 |
|           |                   |                | kg              | –   | –     | –   | –   | –     | –   | –     | –    | –       | 425      | 700  |
| Type 3277 | Without handwheel | lbs            | 7               | 22  | 20    | 26  | 42  | 57    | 88  | –     | –    | –       | –        |      |
|           |                   | kg             | 3.2             | 10  | 9     | 12  | 19  | 26    | 40  | –     | –    | –       | –        |      |
|           | With handwheel    | lbs            | 10              | 31  | 29    | 37  | 53  | 68    | 99  | –     | –    | –       | –        |      |
|           |                   | kg             | 4.5             | 14  | 13    | 17  | 24  | 31    | 45  | –     | –    | –       | –        |      |

**Table 5:** Dimensions and weights for Type 3241 Valve with insulating section or bellows seal**Table 5.1:** Dimensions in mm and weights Type 3241 Valve, NPS ½ to 6 and ½ to 2 NPT thread · Without actuator · Dimensions in inch and mm · Weights in lbs and kg

| Valve size                         |                           | NPS        | ½  | ¾     | 1  | 1½ | 2     | 2½ | 3     | 4     | 6     |       |
|------------------------------------|---------------------------|------------|----|-------|----|----|-------|----|-------|-------|-------|-------|
|                                    |                           | DN         | 15 | 20    | 25 | 40 | 50    | 65 | 80    | 100   | 150   |       |
| Insulating section or bellows seal |                           |            |    |       |    |    |       |    |       |       |       |       |
| H4 for actuator                    | ≤750v2 cm²                | Short      | in | 16.10 |    |    | 16.14 |    | 17.76 |       | 25.04 | 26.46 |
|                                    |                           |            | mm | 409   |    |    | 410   |    | 451   |       | 636   | 672   |
|                                    |                           | Long       | in | 28.07 |    |    | 28.11 |    | 29.72 |       | 34.53 | 35.94 |
|                                    |                           |            | mm | 713   |    |    | 714   |    | 755   |       | 877   | 913   |
|                                    | 1000 cm²/<br>1400-60 cm²  | Short      | in | -     |    |    |       |    |       | 27.36 | 28.82 |       |
|                                    |                           |            | mm |       |    |    |       |    |       | 695   | 732   |       |
|                                    |                           | Long       | in | -     |    |    |       |    |       | 36.85 | 38.31 |       |
|                                    |                           |            | mm |       |    |    |       |    |       | 936   | 973   |       |
|                                    | 1400-120 cm²/<br>2800 cm² | Short Long | in | -     |    |    |       |    |       |       |       |       |
|                                    |                           |            | mm |       |    |    |       |    |       |       |       |       |
| Weight without actuator (approx.)  | Short                     | lbs        | 22 | 24    | 26 | 49 | 57    | 88 | 99    | 176   | 353   |       |
|                                    |                           | kg         | 10 | 11    | 12 | 22 | 26    | 40 | 45    | 80    | 160   |       |
|                                    | Long                      | lbs        | 31 | 33    | 35 | 57 | 66    | 97 | 108   | 194   | 370   |       |
|                                    |                           | kg         | 14 | 15    | 16 | 26 | 30    | 44 | 49    | 88    | 168   |       |

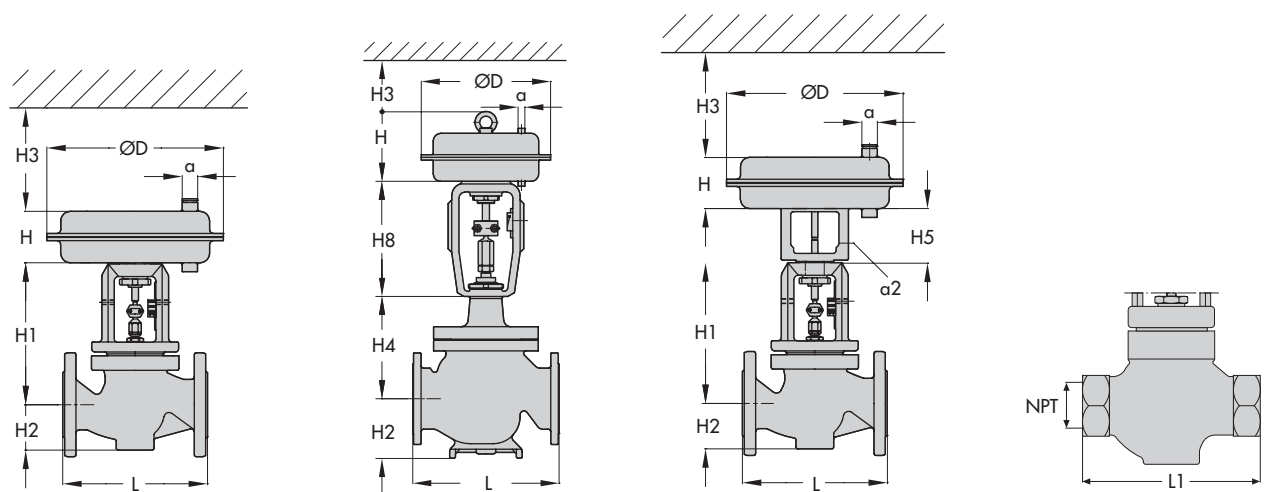
**Table 5.2:** Dimensions in mm and weights Type 3241 Valve, NPS 8 to 12 · Without actuator · Dimensions in inch and mm · Weights in lbs and kg

| Version with                      |                          |    | Insulating section |                                     |                         |      | Metal bellows |                                     |                         |      |
|-----------------------------------|--------------------------|----|--------------------|-------------------------------------|-------------------------|------|---------------|-------------------------------------|-------------------------|------|
| Valve size                        | NPS                      | DN | 8                  | 10<br>Up to<br>200 mm<br>seat bore  | 10<br>Seat<br>bore 250  | 12   | 8             | 10<br>Up to<br>200 mm<br>seat bore  | 10<br>Seat<br>bore 250  | 12   |
|                                   |                          |    | 200                | 250<br>Up to<br>200 mm<br>seat bore | 250<br>Seat<br>bore 250 | 300  | 200           | 250<br>Up to<br>200 mm<br>seat bore | 250<br>Seat<br>bore 250 | 300  |
| H4 for actuator                   | 1000 cm²<br>1400-60 cm²  | in | 32.7               | 41.9                                | –                       | 45.3 | 40.8          | 58.7                                | –                       | 59.8 |
|                                   |                          | mm | 830                | 1065                                | –                       | 1150 | 1036          | 1492                                | –                       | 1520 |
|                                   | 1400-120 cm²<br>2800 cm² | in | 32.7               | 41.9                                | 41.9                    | 45.3 | 40.8          | 58.7                                | 58.7                    | 59.8 |
|                                   |                          | mm | 830                | 1065                                | 1065                    | 1150 | 1036          | 1492                                | 1492                    | 1520 |
| H8 for actuator                   | 1000 cm²<br>1400-60 cm²  | in | 16.5               | 16.5                                | 19.8                    | 19.8 | 16.5          | 16.5                                | 19.8                    | 19.8 |
|                                   |                          | mm | 418                | 418                                 | 503                     | 503  | 418           | 418                                 | 503                     | 503  |
|                                   | 1400-120 cm²<br>2800 cm² | in | 19.8               | 19.8                                | 25.6                    | 25.6 | 19.8          | 19.8                                | 25.6                    | 25.6 |
|                                   |                          | mm | 503                | 503                                 | 650                     | 650  | 503           | 503                                 | 650                     | 650  |
| Weight without actuator (approx.) | lbs                      |    | 1191               | 2220                                | 2220                    | 2690 | 1312          | 2407                                | 2407                    | 2793 |
|                                   | kg                       |    | 540                | 1007                                | 1007                    | 1220 | 595           | 1092                                | 1092                    | 1267 |

**Table 6:** Dimensions for Type 3241 Valve with heating jacket · Not for valves with body material A 126 B · Dimensions in inch and mm

| Valve size | NPS | 1   | 1½ · 2  | 3   | 4    | 6    | 8 to 12    |
|------------|-----|-----|---------|-----|------|------|------------|
|            | DN  | 25  | 40 · 50 | 80  | 100  | 150  | 200 to 300 |
| a          | in  | 4.3 | 5.5     | 7.1 | 7.9  | 10.4 | On request |
|            | mm  | 110 | 140     | 180 | 200  | 265  |            |
| b          | in  | 0.6 | 0.8     | 1.4 | 2    | 3.2  |            |
|            | mm  | 15  | 20      | 35  | 50   | 80   |            |
| c          | in  | 5.5 | 6.7     | 8.5 | 10   | 5.1  |            |
|            | mm  | 140 | 170     | 215 | 255  | 130  |            |
| d          | in  | 7.5 | 7.5     | 9.1 | 12.6 | 14   |            |
|            | mm  | 190 | 190     | 230 | 320  | 355  |            |

### Dimensional drawings



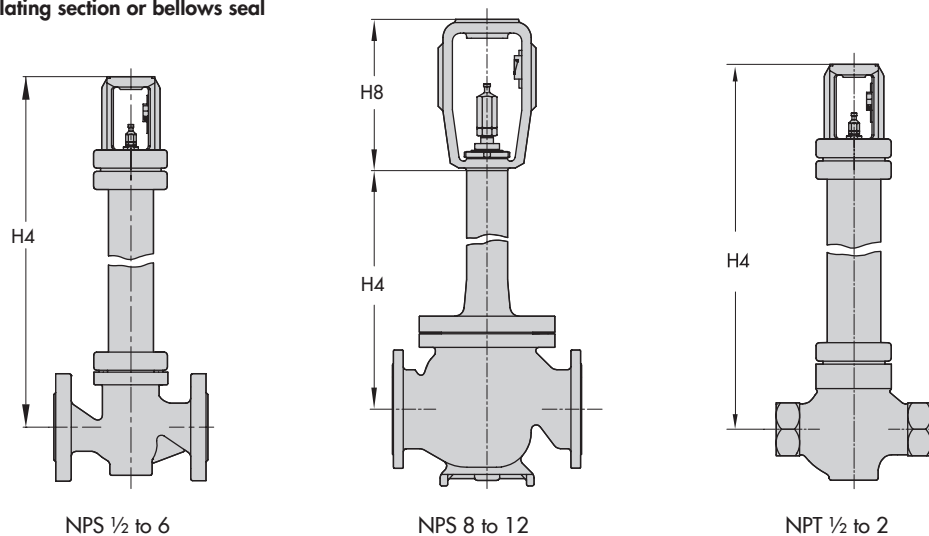
Type 3241-1 · NPS ½ to 6

Type 3241-1 · NPS 8 to 12

Type 3241-7 · NPS ½ to 6

Type 3241 · NPT ½ to 2

### Versions with insulating section or bellows seal

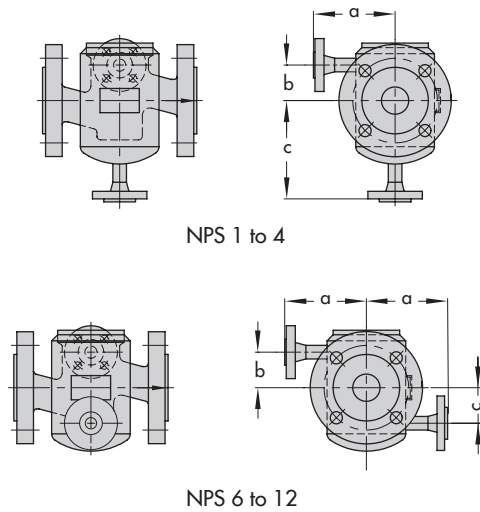


NPS ½ to 6

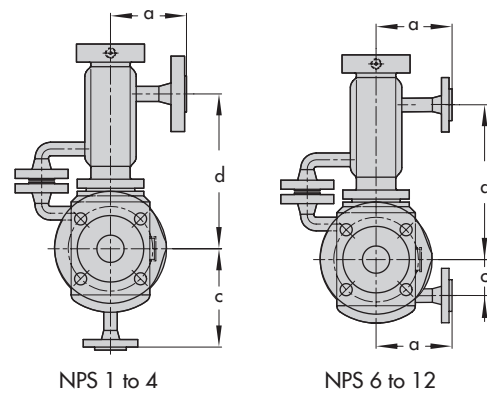
NPS 8 to 12

NPT ½ to 2

### Versions with heating jacket



### Versions with insulating section or bellows seal



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

Specifications subject to change without notice



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**T 8012 EN**

2018-05-24 · English

## T 8015 EN

### Series 240 · Type 3241-1 and Type 3241-7 Pneumatic Control Valves

Type 3241 Globe Valve · DIN version



#### Application

Control valve for process engineering and industrial applications

|                         |                       |
|-------------------------|-----------------------|
| <b>Nominal size</b>     | <b>DN 15 to 300</b>   |
| <b>Nominal pressure</b> | <b>PN 10 to 40</b>    |
| <b>Temperatures</b>     | <b>-196 to 450 °C</b> |

Type 3241 Globe Valve operated with

- Type 3271 Pneumatic Actuator (Type 3241-1 Control Valve) or
- Type 3277 Pneumatic Actuator (Type 3241-7 Control Valve)

Valve body made of

- Cast iron
- Spheroidal graphite iron
- Cast steel, cast stainless steel or cast cold-resisting steel
- Forged steel or forged stainless steel
- Special materials

Undivided valve bonnet up to DN 150

Valve plug

- Metal seal
- Soft seal
- High-performance metal seal

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 60534-6-1 and NAMUR recommendation. Refer to Information Sheet ► T 8350 for more details.

#### Versions

Standard version for temperatures ranging from -10 to 220 °C

- **Type 3241-1** (Figs. 1 and 3) · DN 15 to 300 with Type 3271 Pneumatic Actuator (see Data Sheets ► T 8310-1, ► T 8310-2, ► T 8310-3)
- **Type 3241-7** (Fig. 2) · DN 15 to 150 with Type 3277 Pneumatic Actuator for integral positioner attachment (see Data Sheet ► T 8310-1)

#### Further versions

- **Welding ends**
- **Adjustable packing** · See Information Sheet ► T 8000-1
- **Flow divider or AC-1/AC-2 Trim** for noise reduction · See ► T 8081 and ► T 8082



**Fig. 1:** Type 3241-1  
DN 15 to 150



**Fig. 2:** Type 3241-7  
DN 15 to 80,  
forged steel



**Fig. 3:** Type 3241-1  
DN ≥ 200

- **Perforated plug** · See ► T 8086
- **Valve plug with pressure balancing** · See Technical data
- **Insulating section or bellows seal** · See Technical data
- **Heating jacket** · On request
- **Stainless steel actuator** · See ► T 8310-1
- **Additional handwheel** · See ► T 8310-1, ► T 8310-2 and ► T 8310-3

- **Type 3241 PSA** · Version for pressure swing adsorption plants · See ► T 8015-1 and ► T 8012-1
- **Typetested version** · For heating systems (see ► T 8016) or DIN/DVGW-tested version for gas (see ► T 8020)
- **ANSI version** · See ► T 8012
- **Versions with dimensions according to Japanese Industry Standard (JIS)** · Details on request

#### Principle of operation

The medium flows through the valve in the direction indicated by the arrow on the body. The valve plug position determines the cross-sectional area between the seat and plug.

#### Fail-safe position

Depending on how the springs are arranged in the pneumatic actuator (see Data Sheets ► T 8310-1 and ► T 8310-2), the valve has two different fail-safe positions effective upon air supply failure.

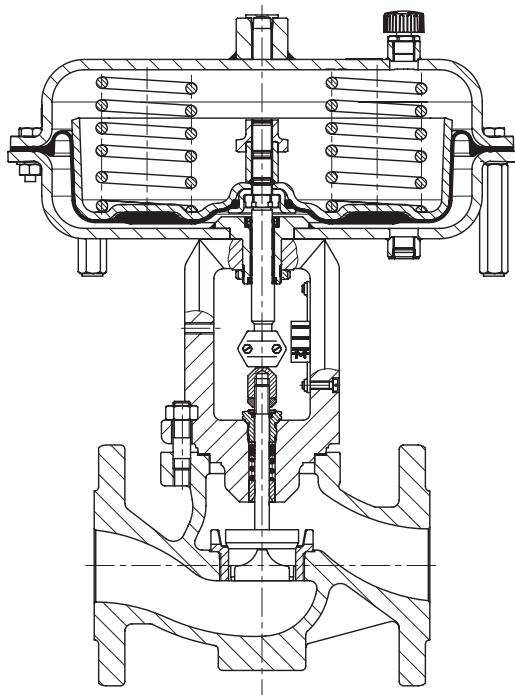
- **Actuator stem extends (fail-close)**  
The valve closes when the supply air fails.
- **Actuator stem retracts (fail-open)**  
The valve opens when the supply air fails.

#### Differential pressures

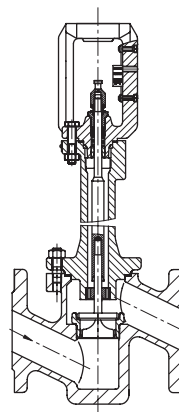
Permissible differential pressures are listed in Information Sheet ► T 8000-4.

#### Note

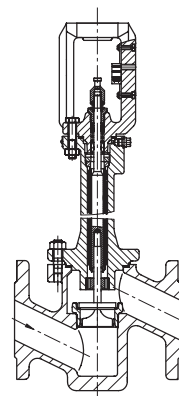
Fig. 4 to Fig. 7 show configuration examples.



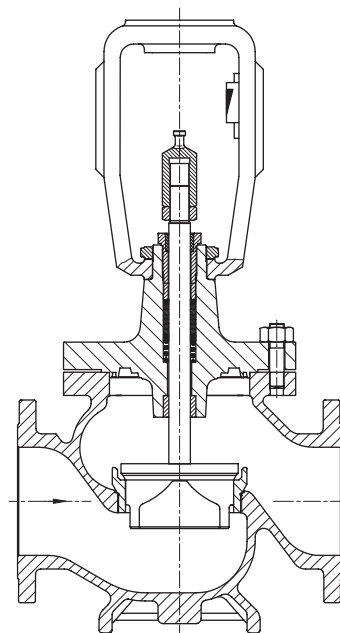
**Fig. 4:** Type 3241-1 Control Valve, DN 15 to 150, with Type 3271 Actuator



**Fig. 5:** Type 3241 Valve, forged steel version, DN 15 to 80, with insulating section



**Fig. 6:** Type 3241 Valve, forged steel version, DN 15 to 80, with bellows seal



**Fig. 7:** Type 3241 Valve, DN 200 to 300

**Table 1: Technical data for Type 3241**

| Nominal size                                                                                                                        |                    | DN                 | 15 to 250                                                                                                                                                       | 15 to 150                                                 | 15 to 300                                                           |                                     |                                 |                                     | 15 · 25 · 40 · 50 · 80 |                                     |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------|---------------------------------|-------------------------------------|------------------------|-------------------------------------|
| Material                                                                                                                            |                    |                    | Cast iron<br>EN-GJL-250<br>(EN-JL1040)                                                                                                                          | Sph. graphite<br>iron EN-GJS-<br>400-18-LT<br>(EN-JS1049) | Cast steel<br>1.0619                                                | Cast stain-<br>less steel<br>1.4408 | Cast steel<br>1.6220/<br>1.1138 | Cast stain-<br>less steel<br>1.4308 | Forged steel<br>1.0460 | Forged<br>stainless<br>steel 1.4571 |
| Nominal pres-<br>sure                                                                                                               |                    | PN                 | 10 · 16                                                                                                                                                         | 16 · 25                                                   | 10 · 16 · 25 · 40                                                   |                                     |                                 |                                     |                        |                                     |
| Type of end<br>connection                                                                                                           | Flanges            |                    | All DIN versions                                                                                                                                                |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
|                                                                                                                                     | Welding ends       |                    | –                                                                                                                                                               |                                                           | DIN EN 12627 only for DN 25, 40, 50, 80, 100,<br>150, 200, 250, 300 |                                     |                                 |                                     | –                      |                                     |
| Seat/plug seal                                                                                                                      |                    |                    | Metal seal · Soft seal · High-performance metal seal                                                                                                            |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
| Characteristic                                                                                                                      |                    |                    | Equal percentage · Linear (according to Information Sheet ► T 8000-3)                                                                                           |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
| Rangeability                                                                                                                        |                    |                    | 50:1 for DN 15 to 50 · 30:1 for DN 65 to 150 · 50:1 for DN 200 and larger                                                                                       |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
| Heating jacket                                                                                                                      | Up to DN 100       |                    | PN 25                                                                                                                                                           |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
|                                                                                                                                     | ≥DN 125            |                    | PN 16                                                                                                                                                           |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
| Compliance                                                                                                                          |                    |                    | CE · EAC                                                                                                                                                        |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
| Temperature ranges in °C · Permissible operating pressures acc. to pressure-temperature diagrams (see Information Sheet ► T 8000-2) |                    |                    |                                                                                                                                                                 |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
| Body without insulating section                                                                                                     |                    |                    | –10 to +220                                                                                                                                                     |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
| Body with                                                                                                                           | Insulating section |                    | –10 to +300                                                                                                                                                     | –10 to +350                                               | –10 to +400 <sup>1)</sup>                                           | –50 to +450 <sup>2)</sup>           | –50 to +300                     | –50 to +300 <sup>2)</sup>           | –10 to +400            | –50 to +450                         |
|                                                                                                                                     | Long               |                    | –                                                                                                                                                               |                                                           |                                                                     | –196 to +450                        | –                               | –196 to +300                        | –                      | –196 to +450                        |
|                                                                                                                                     | Bellows seal       |                    | –10 to +300                                                                                                                                                     | –10 to +350                                               | –10 to +400 <sup>1)</sup>                                           | –50 to +450 <sup>2)</sup>           | –50 to +300                     | –50 to +300 <sup>2)</sup>           | –10 to +400            | –50 to +450                         |
|                                                                                                                                     | Long               |                    | –                                                                                                                                                               |                                                           |                                                                     | –196 to +450                        | –                               | –196 to +300                        | –                      | –196 to +450                        |
| Valve plug                                                                                                                          | Standard           | Metal seal         | –196 to 450                                                                                                                                                     |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
|                                                                                                                                     |                    | Soft seal          | –196 to 220                                                                                                                                                     |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
|                                                                                                                                     | Balanced           | With PTFE ring     | –50 to 220 · Lower temperatures on request                                                                                                                      |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
|                                                                                                                                     |                    | With graphite ring | 220 to 450                                                                                                                                                      |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
| Leakage class according to IEC 60534-4                                                                                              |                    |                    |                                                                                                                                                                 |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
| Valve plug                                                                                                                          | Metal seal         |                    | Standard: IV · High-performance metal seal: V                                                                                                                   |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
|                                                                                                                                     | Soft seal          |                    | VI                                                                                                                                                              |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |
|                                                                                                                                     | Balanced           | Metal seal         | Standard: IV · With PTFE or graphite pressure-balancing ring<br>Special version: V · For high-performance metal seal (only with PTFE balancing ring) on request |                                                           |                                                                     |                                     |                                 |                                     |                        |                                     |

<sup>1)</sup> Special version: temperature range extended up to 450 °C when cast steel 1.0619 is used for pressure-bearing parts

<sup>2)</sup> DN 200 and larger: down to –196 °C

**Table 2: Materials**

Table 21 Materials

| Standard version         |                                                                |                                                           |                      |                                      |                                 |                                      |                               |                                        |
|--------------------------|----------------------------------------------------------------|-----------------------------------------------------------|----------------------|--------------------------------------|---------------------------------|--------------------------------------|-------------------------------|----------------------------------------|
| Valve body <sup>1)</sup> | Cast iron<br>EN-GJL-250<br>(EN-JL1040)                         | Sph. graphite<br>iron EN-GJS-<br>400-18-LT<br>(EN-JS1049) | Cast steel<br>1.0619 | Cast<br>stainless<br>steel<br>1.4408 | Cast steel<br>1.6220/<br>1.1138 | Cast<br>stainless<br>steel<br>1.4308 | Forged steel<br>1.0460        | Forged<br>stainless<br>steel<br>1.4571 |
| Valve bonnet             | 1.0460/<br>EN-GJL-250                                          | 1.0460/1.0619                                             |                      | 1.4408/<br>1.4401/<br>1.4404         | 1.0566/<br>1.6220               | 1.4308/<br>1.4301                    | 1.0460                        | 1.4401/<br>1.4404                      |
| Seat <sup>2)</sup>       | 1.4006/1.4008                                                  |                                                           |                      | 1.4404/<br>1.4409                    | 1.4006/<br>1.4008               | 1.4301/<br>1.4308                    | 1.4006/<br>1.4008             | 1.4404/<br>1.4409                      |
| Plug <sup>2)</sup>       | 1.4006 (1.4404)/1.4008                                         |                                                           |                      | 1.4404/<br>1.4409                    | 1.4006<br>(1.4404)/<br>1.4008   | 1.4301/<br>1.4308                    | 1.4006<br>(1.4404)/<br>1.4008 | 1.4404/<br>1.4409                      |
| Plug seal                | Seal ring for soft-seated plug: PTFE with glass fiber          |                                                           |                      |                                      |                                 |                                      |                               |                                        |
|                          | Seal ring for balanced plug: PTFE with carbon or graphite ring |                                                           |                      |                                      |                                 |                                      | -                             |                                        |
| Guide bushing            | 1.4104                                                         |                                                           |                      | 1.4404                               | 1.4404                          | 1.4301                               | 1.4104                        | 1.4404                                 |
| Packing <sup>3)</sup>    | V-ring packing: PTFE with carbon · Spring: 1.4310              |                                                           |                      |                                      |                                 |                                      |                               |                                        |
| Body gasket              | Graphite on metal core                                         |                                                           |                      |                                      |                                 |                                      |                               |                                        |
| Insulating section       | 1.0460                                                         |                                                           |                      | 1.4401/<br>1.4404                    | 1.0566                          | 1.4301                               | 1.0460                        | 1.4401/<br>1.4404                      |
| Bellows seal             | Intermediate<br>piece                                          | 1.0460                                                    |                      | 1.4401/<br>1.4404                    | 1.0566                          | 1.4301                               | 1.0460                        | 1.4401/<br>1.4404                      |
|                          | Metal bellows                                                  | 1.4571 <sup>4)</sup>                                      |                      |                                      |                                 | 1.4541                               | 1.4571 <sup>4)</sup>          |                                        |
| Heating jacket           | -                                                              |                                                           | 1.4404               |                                      |                                 |                                      |                               |                                        |

<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 ► T 8000-1).

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

**Table 3:**  $K_{VS}$  coefficientsTerms for control valve sizing according to IEC 60534, Parts 2-1 and 2-2:  $F_L = 0.95$ ,  $X_T = 0.75$ **Table 3.1:** Overview with flow divider ST 1 ( $K_{VS1}$ ), ST 2 ( $K_{VS2}$ ) or ST 3 ( $K_{VS3}$ )

| K <sub>VS</sub>  | 0.1<br>0.16<br>0.25 | 0.4 | 0.63 | 1.0 | 1.6  | 2.5 | 4.0 | 6.3 | 10  | 16   | 25 | 40 | 60 | 80 | 63 | 100 | 160 | 200 | 260 | 250 | 360 | 630 | 1000<br>1) | 1500<br>1) |
|------------------|---------------------|-----|------|-----|------|-----|-----|-----|-----|------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|------------|------------|
| K <sub>VS1</sub> | –                   |     |      |     | 1.45 | 2.2 | 3.6 | 5.7 | 9   | 14.5 | 22 | 36 | 54 | 72 | 57 | 90  | 144 | 180 | 234 | 225 | 320 | 560 | 900<br>1)  | 1350<br>1) |
| K <sub>VS2</sub> | –                   |     |      |     |      |     |     |     | 8   | 13   | 20 | 32 | 48 | 63 | 50 | 80  | 125 | 160 | 210 | 200 | 290 | 500 | 800        | –          |
| K <sub>VS3</sub> | –                   |     |      |     |      |     |     |     | 7.5 | 12   | 20 | 30 | –  | –  | 47 | 75  | 120 | –   | –   | 190 | 270 | 480 | 750        | –          |
| Seat Ø[mm]       | 3                   | 6   |      |     | 12   |     |     | 24  |     | 31   | 38 | 48 | 63 | 80 | 63 | 80  | 100 | 110 | 130 | 125 | 150 | 200 | 250        | 300        |
| Travel [mm]      | 15                  |     |      |     |      |     |     |     |     |      |    |    |    |    | 30 |     |     |     |     | 60  |     |     | 120        |            |

<sup>1)</sup> Not available with valve body made of cast iron (EN-GJL-250).**Table 3.2:** Versions without flow divider · Areas highlighted in gray indicate versions also with pressure balancing

| $K_{VS}$ | 0.1<br>0.16<br>0.25 | 0.4 | 0.63 | 1.0 | 1.6 | 2.5 | 4.0 | 6.3 | 10 | 16 | 25 | 40 | 60 | 80 | 63 | 100             | 160 | 200 | 260 | 250 | 360 | 630 | 1000            | 1500 |
|----------|---------------------|-----|------|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|-----------------|-----|-----|-----|-----|-----|-----|-----------------|------|
| DN       |                     |     |      |     |     |     |     |     |    |    |    |    |    |    |    |                 |     |     |     |     |     |     |                 |      |
| 15       | •                   | •   | •    | •   | •   | •   | •   |     |    |    |    |    |    |    |    |                 |     |     |     |     |     |     |                 |      |
| 20       | •                   | •   | •    | •   | •   | •   | •   | •   |    |    |    |    |    |    |    |                 |     |     |     |     |     |     |                 |      |
| 25       | •                   | •   | •    | •   | •   | •   | •   | •   | •  |    |    |    |    |    |    |                 |     |     |     |     |     |     |                 |      |
| 32       |                     | •   | •    | •   | •   | •   | •   | •   | •  | •  |    |    |    |    |    |                 |     |     |     |     |     |     |                 |      |
| 40       |                     | •   | •    | •   | •   | •   | •   | •   | •  | •  | •  |    |    |    |    |                 |     |     |     |     |     |     |                 |      |
| 50       |                     | •   | •    | •   | •   | •   | •   | •   | •  | •  | •  | •  |    |    |    |                 |     |     |     |     |     |     |                 |      |
| 65       |                     |     |      |     |     |     |     |     |    |    | •  | •  | •  |    |    |                 |     |     |     |     |     |     |                 |      |
| 80       |                     |     |      |     |     |     |     |     |    |    | •  | •  | •  | •  |    | • <sup>1)</sup> |     |     |     |     |     |     |                 |      |
| 100      |                     |     |      |     |     |     |     |     |    |    |    |    |    |    | •  | •               | •   |     |     |     |     |     |                 |      |
| 125      |                     |     |      |     |     |     |     |     |    |    |    |    |    |    | •  | •               | •   | •   |     |     |     |     |                 |      |
| 150      |                     |     |      |     |     |     |     |     |    |    |    |    |    |    | •  | •               | •   |     | •   |     |     |     |                 |      |
| 200      |                     |     |      |     |     |     |     |     |    |    |    |    |    |    |    | •               | •   |     |     | •   | •   | •   |                 |      |
| 250      |                     |     |      |     |     |     |     |     |    |    |    |    |    |    |    | •               | •   |     |     | •   | •   | •   | • <sup>2)</sup> |      |
| 300      |                     |     |      |     |     |     |     |     |    |    |    |    |    |    |    |                 | •   |     |     | •   | •   | •   | •               | •    |

<sup>1)</sup> With 19 mm overtravel (not with bellows seal)<sup>2)</sup> DN 250 with  $K_{VS} = 1000$  not available with valve body made of cast iron (EN-GJL-250).**Table 3.3:** Versions with flow divider ST 1 ( $K_{VS1}$ ) · Areas highlighted in gray indicate versions also with pressure balancing

| $K_{VS1}$ | – |  |  |  | 1.45 | 2.2 | 3.6 | 5.7 | 9 | 14.5 | 22 | 36 | 54 | 72 | 57 | 90 | 144 | 180 | 234 | 225 | 320 | 560 | 900             | 1350 |
|-----------|---|--|--|--|------|-----|-----|-----|---|------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----------------|------|
| DN        |   |  |  |  |      |     |     |     |   |      |    |    |    |    |    |    |     |     |     |     |     |     |                 |      |
| 15        |   |  |  |  | •    | •   | •   |     |   |      |    |    |    |    |    |    |     |     |     |     |     |     |                 |      |
| 20        |   |  |  |  | •    | •   | •   |     |   |      |    |    |    |    |    |    |     |     |     |     |     |     |                 |      |
| 25        |   |  |  |  | •    | •   | •   |     |   |      |    |    |    |    |    |    |     |     |     |     |     |     |                 |      |
| 32        |   |  |  |  |      |     |     | •   | • | •    |    |    |    |    |    |    |     |     |     |     |     |     |                 |      |
| 40        |   |  |  |  |      |     |     | •   | • | •    | •  |    |    |    |    |    |     |     |     |     |     |     |                 |      |
| 50        |   |  |  |  |      |     |     | •   | • | •    | •  | •  |    |    |    |    |     |     |     |     |     |     |                 |      |
| 65        |   |  |  |  |      |     |     |     |   |      | •  | •  | •  |    |    |    |     |     |     |     |     |     |                 |      |
| 80        |   |  |  |  |      |     |     |     |   |      | •  | •  | •  | •  |    |    |     |     |     |     |     |     |                 |      |
| 100       |   |  |  |  |      |     |     |     |   |      |    |    |    |    | •  | •  | •   |     |     |     |     |     |                 |      |
| 125       |   |  |  |  |      |     |     |     |   |      |    |    |    |    | •  | •  | •   | •   |     |     |     |     |                 |      |
| 150       |   |  |  |  |      |     |     |     |   |      |    |    |    |    | •  | •  | •   |     | •   |     |     |     |                 |      |
| 200       |   |  |  |  |      |     |     |     |   |      |    |    |    |    |    | •  | •   |     |     | •   | •   | •   |                 |      |
| 250       |   |  |  |  |      |     |     |     |   |      |    |    |    |    |    | •  | •   |     |     | •   | •   | •   | • <sup>1)</sup> |      |
| 300       |   |  |  |  |      |     |     |     |   |      |    |    |    |    |    |    | •   |     |     | •   | •   | •   | •               | •    |

<sup>1)</sup> DN 250 with  $K_{VS1} = 900$  not available with valve body made of cast iron (EN-GJL-250).

**Table 3.1:** Overview with flow divider ST 1 ( $K_{VS1}$ ), ST 2 ( $K_{VS2}$ ) or ST 3 ( $K_{VS3}$ )

| K <sub>VS</sub>  | 0.1<br>0.16<br>0.25 | 0.4 | 0.63 | 1.0 | 1.6  | 2.5 | 4.0 | 6.3 | 10  | 16   | 25 | 40 | 60 | 80 | 63  | 100 | 160 | 200 | 260 | 250 | 360 | 630 | 1000<br>1) | 1500<br>1) |
|------------------|---------------------|-----|------|-----|------|-----|-----|-----|-----|------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------------|------------|
| K <sub>VS1</sub> | –                   |     |      |     | 1.45 | 2.2 | 3.6 | 5.7 | 9   | 14.5 | 22 | 36 | 54 | 72 | 57  | 90  | 144 | 180 | 234 | 225 | 320 | 560 | 900<br>1)  | 1350<br>1) |
| K <sub>VS2</sub> | –                   |     |      |     |      |     |     |     | 8   | 13   | 20 | 32 | 48 | 63 | 50  | 80  | 125 | 160 | 210 | 200 | 290 | 500 | 800        | –          |
| K <sub>VS3</sub> | –                   |     |      |     |      |     |     |     | 7.5 | 12   | 20 | 30 | –  | –  | 47  | 75  | 120 | –   | –   | 190 | 270 | 480 | 750        | –          |
| Seat Ø [mm]      | 3                   | 6   |      | 12  |      | 24  |     | 31  | 38  | 48   | 63 | 80 | 63 | 80 | 100 | 110 | 130 | 125 | 150 | 200 | 250 | 300 |            |            |
| Travel [mm]      | 15                  |     |      |     |      |     |     |     |     |      |    |    |    |    | 30  |     |     |     |     | 60  |     |     | 120        |            |

1) Not available with valve body made of cast iron (EN-GJL-250).

**Table 3.4:** Versions with flow divider ST 2 ( $K_{VS2}$ ) · Areas highlighted in gray indicate versions also with pressure balancing

| $K_{VS2}$ | – |  |  |  |  |  |  |  | 8 | 13 | 20 | 32 | 48 | – | 50 | 80 | 125 | 160 | 210 | 200 | 290 | 500 | 800 | – |
|-----------|---|--|--|--|--|--|--|--|---|----|----|----|----|---|----|----|-----|-----|-----|-----|-----|-----|-----|---|
| DN        |   |  |  |  |  |  |  |  |   |    |    |    |    |   |    |    |     |     |     |     |     |     |     |   |
| 15        |   |  |  |  |  |  |  |  |   |    |    |    |    |   |    |    |     |     |     |     |     |     |     |   |
| 20        |   |  |  |  |  |  |  |  |   |    |    |    |    |   |    |    |     |     |     |     |     |     |     |   |
| 25        |   |  |  |  |  |  |  |  |   |    |    |    |    |   |    |    |     |     |     |     |     |     |     |   |
| 32        |   |  |  |  |  |  |  |  | • | •  |    |    |    |   |    |    |     |     |     |     |     |     |     |   |
| 40        |   |  |  |  |  |  |  |  | • | •  | •  |    |    |   |    |    |     |     |     |     |     |     |     |   |
| 50        |   |  |  |  |  |  |  |  | • | •  | •  |    |    |   |    |    |     |     |     |     |     |     |     |   |
| 65        |   |  |  |  |  |  |  |  |   |    | •  | •  | •  |   |    |    |     |     |     |     |     |     |     |   |
| 80        |   |  |  |  |  |  |  |  |   |    | •  | •  | •  |   |    |    |     |     |     |     |     |     |     |   |
| 100       |   |  |  |  |  |  |  |  |   |    |    |    |    |   | •  | •  | •   |     |     |     |     |     |     |   |
| 125       |   |  |  |  |  |  |  |  |   |    |    |    |    |   |    | •  | •   | •   |     |     |     |     |     |   |
| 150       |   |  |  |  |  |  |  |  |   |    |    |    |    |   | •  | •  | •   |     | •   |     |     |     |     |   |
| 200       |   |  |  |  |  |  |  |  |   |    |    |    |    |   |    | •  | •   |     |     | •   | •   | •   |     |   |
| 250       |   |  |  |  |  |  |  |  |   |    |    |    |    |   |    | •  | •   |     |     | •   | •   | •   |     |   |
| 300       |   |  |  |  |  |  |  |  |   |    |    |    |    |   |    |    | •   |     |     | •   | •   | •   | •   |   |

**Table 3.5:** Versions with flow divider ST 3 ( $K_{VS3}$ ) · Areas highlighted in gray indicate versions also with pressure balancing

| $K_{VS3}$ | – |  |  |  |  |  |  |  | 7.5  | 12 | 20 | 30 | – | – | 47 | 75 | 120 | – | – | 190 | 270 | 480 | 750 | – |
|-----------|---|--|--|--|--|--|--|--|------|----|----|----|---|---|----|----|-----|---|---|-----|-----|-----|-----|---|
| DN        |   |  |  |  |  |  |  |  |      |    |    |    |   |   |    |    |     |   |   |     |     |     |     |   |
| 15        |   |  |  |  |  |  |  |  |      |    |    |    |   |   |    |    |     |   |   |     |     |     |     |   |
| 20        |   |  |  |  |  |  |  |  |      |    |    |    |   |   |    |    |     |   |   |     |     |     |     |   |
| 25        |   |  |  |  |  |  |  |  |      |    |    |    |   |   |    |    |     |   |   |     |     |     |     |   |
| 32        |   |  |  |  |  |  |  |  |      |    |    |    |   |   |    |    |     |   |   |     |     |     |     |   |
| 40        |   |  |  |  |  |  |  |  |      |    |    |    |   |   |    |    |     |   |   |     |     |     |     |   |
| 50        |   |  |  |  |  |  |  |  | • 1) |    |    |    |   |   |    |    |     |   |   |     |     |     |     |   |
| 65        |   |  |  |  |  |  |  |  |      | •  | •  | •  |   |   |    |    |     |   |   |     |     |     |     |   |
| 80        |   |  |  |  |  |  |  |  |      | •  | •  | •  |   |   |    |    |     |   |   |     |     |     |     |   |
| 100       |   |  |  |  |  |  |  |  |      |    |    |    |   |   | •  |    |     |   |   |     |     |     |     |   |
| 125       |   |  |  |  |  |  |  |  |      |    |    |    |   |   |    | •  |     |   |   |     |     |     |     |   |
| 150       |   |  |  |  |  |  |  |  |      |    |    |    |   |   | •  | •  | •   |   |   |     |     |     |     |   |
| 200       |   |  |  |  |  |  |  |  |      |    |    |    |   |   |    | •  | •   |   |   | •   | •   |     |     |   |
| 250       |   |  |  |  |  |  |  |  |      |    |    |    |   |   | •  | •  | •   |   |   | •   | •   | •   |     |   |
| 300       |   |  |  |  |  |  |  |  |      |    |    |    |   |   |    |    | •   |   |   | •   | •   | •   | •   |   |

1) Not with bellows seal or insulating section

**Table 4:** Dimensions in mm for standard version of Type 3241-1 and Type 3241-7 with flanges or welding ends**Table 4.1:** Dimensions for Type 3241 Valve up to DN 150 · Without actuator

| 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 for actuator | ≤ 750v2 cm²              | 222 |     |     | 223 |     |     | 262 |     | 354 | 363 | 390 |
|                 | 1000 cm²                 | -   |     |     |     |     |     |     |     | 413 | 423 | 450 |
|                 | 1400-60 cm²              |     |     |     |     |     |     |     |     |     |     |     |
|                 | 1400-120 cm²<br>2800 cm² | -   |     |     |     |     |     |     |     |     |     |     |
| H2 for          | Cast steel               | 44  |     |     | 72  |     |     | 98  |     | 118 | 144 | 175 |
|                 | Forged steel             | 53  | -   | 70  | -   | 92  | 98  | -   | 128 | -   |     |     |

**Table 4.2:** Dimensions for Type 3241 Valve, DN 200 and higher · Without actuator

| Valve                         | DN                       | 200 | 250/cast iron | 250<br>up to 200 mm<br>seat bore | 250<br>seat bore 250 mm<br>and larger | 300 |
|-------------------------------|--------------------------|-----|---------------|----------------------------------|---------------------------------------|-----|
| Length L                      | mm                       | 600 | 730           | 730                              | 730                                   | 850 |
| H4                            | mm                       | 390 | 390           | 451                              | 451                                   | 652 |
| H8 <sup>1)</sup> for actuator | 1000 cm <sup>2</sup>     | 418 | 418           | 418                              | 503                                   | 503 |
|                               | 1400-60 cm <sup>2</sup>  |     |               |                                  |                                       |     |
|                               | 1400-120 cm <sup>2</sup> | 503 | 503           | 503                              | 650                                   | 650 |
|                               | 2800 cm <sup>2</sup>     |     |               |                                  |                                       |     |
| H2                            | mm                       | 245 | 270           | 310                              | 310                                   | 370 |

<sup>1)</sup> Add 170 mm to H8 for valves with K<sub>VS</sub> 250, 360 or 630 and 60 mm rated travel operating with overtravel.

**Table 4.3:** Dimensions in mm for Type 3271 and Type 3277 Pneumatic Actuators

| Actuator area    | cm <sup>2</sup> | 120                | 175v2              | 240                | 350                | 355v2              | 700                | 750v2              | 1000               | 1400-60            | 1400-120       | 2800           |
|------------------|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------|----------------|
| Diaphragm ØD     | mm              | 168                | 215                | 240                | 280                | 280                | 390                | 394                | 462                | 530                | 534            | 770            |
| H <sup>1)</sup>  | mm              | 69                 | 78                 | 62                 | 82                 | 121                | 199                | 236                | 403                | 337                | 598            | 713            |
| H3 <sup>2)</sup> | mm              | 110                | 110                | 110                | 110                | 110                | 190                | 190                | 610                | 610                | 650            | 650            |
| H5               | Type 3277       | mm                 | 88                 | 101                | 101                | 101                | 101                | 101                | 101                | –                  | –              | –              |
| Thread           | Type 3271       | M30 x 1.5          |                    |                    |                    |                    |                    |                    | M60 x 1.5          |                    | M100 x 2       |                |
|                  | Type 3277       | M30 x 1.5          |                    |                    |                    |                    |                    |                    | –                  | –                  | –              | –              |
| α                | Type 3271       | G 1/8<br>(1/8 NPT) | G 1/4<br>(1/4 NPT) | G 1/4<br>(1/4 NPT) | G 3/8<br>(3/8 NPT) | G 3/8<br>(3/8 NPT) | G 3/8<br>(3/8 NPT) | G 3/8<br>(3/8 NPT) | G 3/4<br>(3/4 NPT) | G 3/4<br>(3/4 NPT) | G 1<br>(1 NPT) | G 1<br>(1 NPT) |
| α2               | Type 3277       | –                  | G 3/8              | G 3/8              | G 3/8              | G 3/8              | G 3/8              | G 3/8              | –                  | –                  | –              | –              |

<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 4.4:** *Weights in kg for standard version of Type 3241-1 and Type 3241-7*

| Valve                            | DN | 15 | 20  | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250<br>cast<br>iron | 250<br>-60/<br>-120 | 300 |
|----------------------------------|----|----|-----|----|----|----|----|----|----|-----|-----|-----|-----|---------------------|---------------------|-----|
| Weight without actuator<br>in kg |    | 6  | 7.5 | 8  | 12 | 14 | 18 | 29 | 34 | 52  | 81  | 108 | 430 | 468                 | 858                 | 920 |

| Actuator                 | cm <sup>2</sup>             | 120 | 175v2 | 240 | 350 | 355v2 | 700 | 750v2 | 1000 | 1400-<br>60 | 1400-<br>120 | 2800 |
|--------------------------|-----------------------------|-----|-------|-----|-----|-------|-----|-------|------|-------------|--------------|------|
| Type<br>3271<br>Actuator | Without hand-<br>wheel      | 2.5 | 6     | 5   | 8   | 15    | 22  | 36    | 80   | 70          | 175          | 450  |
|                          | Handwheel<br>≤80 mm travel  | 4   | 10    | 9   | 13  | 20    | 27  | 41    | 180  | 175         | 300          | 575  |
|                          | Handwheel<br>≤160 mm travel | -   |       |     |     |       |     |       |      |             | 425          | 700  |
| Type<br>3277<br>Actuator | Without hand-<br>wheel      | 3.2 | 10    | 9   | 12  | 19    | 26  | 40    | -    |             |              |      |
|                          | Handwheel                   | 4.5 | 14    | 13  | 17  | 24    | 31  | 45    |      |             |              |      |

**Table 5:** *Dimensions and weights for Type 3241 with insulating section or bellows seal · Without actuator***Table 5.1:** *Type 3241 Valve, up to DN 150 · Without actuator*

| Nominal size DN         |                                                                                               | 15  | 20   | 25 | 32  | 40 | 50 | 65  | 80 | 100 | 125 | 150 |
|-------------------------|-----------------------------------------------------------------------------------------------|-----|------|----|-----|----|----|-----|----|-----|-----|-----|
| H4 for<br>actua-<br>tor | Insulating section/<br>bellows seal<br>≤750v2 cm <sup>2</sup>                                 | 409 |      |    | 410 |    |    | 451 |    | 636 | 645 | 672 |
|                         | Long                                                                                          | 713 |      |    | 714 |    |    | 755 |    | 877 | 886 | 913 |
|                         | Insulating section/<br>bellows seal<br>1000 cm <sup>2</sup> /<br>1400-60 cm <sup>2</sup>      | -   |      |    |     |    |    |     |    | 695 | 705 | 732 |
|                         | Long                                                                                          | -   |      |    |     |    |    |     |    | 936 | 946 | 973 |
|                         | Insulating section/<br>bellows seal<br>1400-<br>120 cm <sup>2</sup> /<br>2800 cm <sup>2</sup> | -   |      |    |     |    |    |     |    |     |     |     |
|                         | Long                                                                                          |     |      |    |     |    |    |     |    |     |     |     |
| Weight<br>in kg         | Short with bellows                                                                            | 9   | 10.5 | 11 | 18  | 20 | 24 | 37  | 42 | 70  | 106 | 138 |
|                         | Long with bellows                                                                             | 13  | 14.5 | 15 | 22  | 24 | 28 | 41  | 46 | 78  | 114 | 146 |

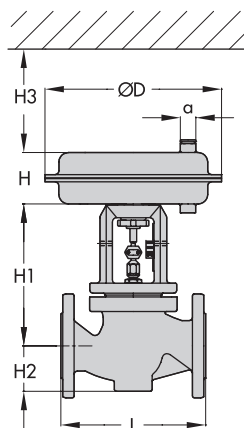
**Table 5.2:** *Dimensions and weights for Type 3241 Valve, DN 200 and larger · Without actuator*

| Version with       |                          | Insulating section |                       |                                     |                            | Metal bellows |      |                       |                                     |                            |      |
|--------------------|--------------------------|--------------------|-----------------------|-------------------------------------|----------------------------|---------------|------|-----------------------|-------------------------------------|----------------------------|------|
| Valve DN (travel)  | mm                       | 200                | 250<br>(cast<br>iron) | 250<br>up to<br>200 mm<br>seat bore | 250<br>250 mm<br>seat bore | 300           | 200  | 250<br>(cast<br>iron) | 250<br>up to<br>200 mm<br>seat bore | 250<br>250 mm<br>seat bore | 300  |
| Height<br>H4       | mm                       | 830                | 830                   | 1065                                | 1065                       | 1150          | 1036 | 1036                  | 1492                                | 1492                       | 1520 |
| H8 for<br>actuator | 1000 cm <sup>2</sup>     | 418                | 418                   | 418                                 | 503                        | 503           | 418  | 418                   | 418                                 | 503                        | 503  |
|                    | 1400-60 cm <sup>2</sup>  |                    |                       |                                     |                            |               |      |                       |                                     |                            |      |
|                    | 1400-120 cm <sup>2</sup> | 503                | 503                   | 503                                 | 650                        | 650           | 503  | 503                   | 503                                 | 650                        | 650  |
|                    | 2800 cm <sup>2</sup>     |                    |                       |                                     |                            |               |      |                       |                                     |                            |      |
| Weight             | approx. kg               | 478                | 928                   |                                     |                            | 963           | 520  | 975                   |                                     |                            | 1010 |

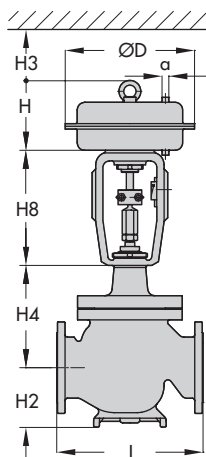
**Table 6:** *Dimensions in mm for Type 3241 with heating jacket - Not for valves with body materials EN-GJL-250 or EN-GJS-400-18-LT*

| Nominal size | DN | 25  | 40/50 | 80  | 100 | 150 | 200 to 300 |
|--------------|----|-----|-------|-----|-----|-----|------------|
| a            | mm | 110 | 140   | 180 | 200 | 265 | On request |
| b            | mm | 15  | 20    | 35  | 50  | 80  |            |
| c            | mm | 140 | 170   | 215 | 255 | 130 |            |
| d            | mm | 190 | 190   | 230 | 320 | 355 |            |

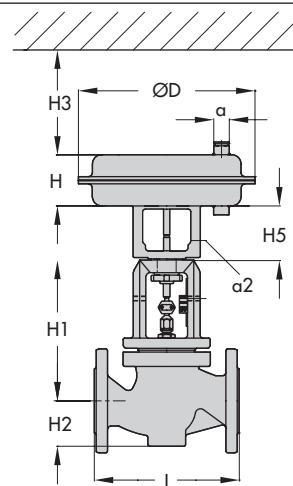
## Dimensional drawings



Type 3241-1 · DN 15 to 150

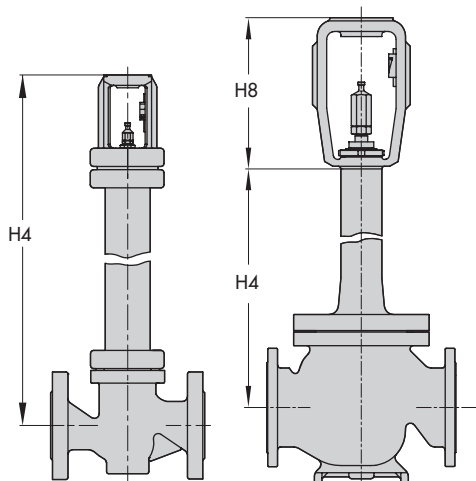


Type 3241-1 · DN 200 to 300

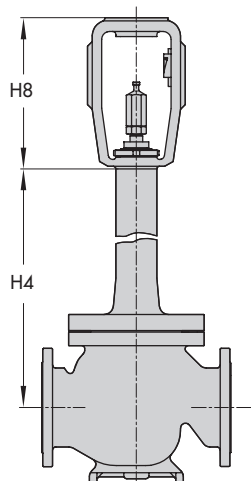


Type 3241-7 · DN 15 to 150

### Type 3241 with insulating section or bellows seal

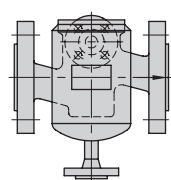


DN 15 to 150

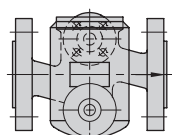


DN 200 to 300

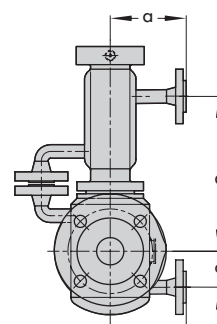
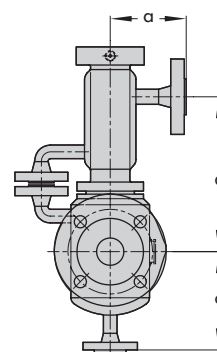
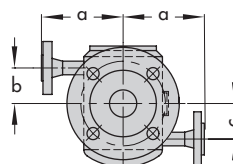
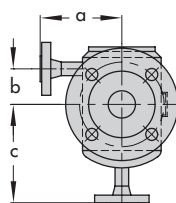
### Type 3241 with heating jacket DN 25 to 100



DN 150 to 300



Flanges, DIN 2635



Bellows seal version with heating jacket

## Ordering text

|                        |                                                      |
|------------------------|------------------------------------------------------|
| Globe valve            | Type 3241, DN ..., PN ...                            |
| Body material          | According to Table 2                                 |
| Type of end connection | Flanges or welding ends                              |
| Seat and plug          | Metal seal/soft seal/<br>high-performance metal seal |
| Characteristic         | Equal percentage or linear                           |
| Pneumatic actuator     | Type 3271 or Type 3277                               |
| Fail-safe position     | Fail-close or fail-open                              |

Process medium

Max. flow rate

Pressure

Accessories

Density and temperature

in kg/h oder m<sup>3</sup>/h

p<sub>1</sub> and p<sub>2</sub> in bar (absolute pressure)

Positioner/limit switch

Associated Information Sheet

T 8000-x