

## T 8112 EN

### Series V2001 Valves · Type 3321 Globe Valve with electropneumatic, pneumatic or electric actuators

ANSI version



#### Application

Control valves designed for mechanical and plant engineering. Suitable for liquids, gases and steam

|                          |                                      |
|--------------------------|--------------------------------------|
| <b>Valve size</b>        | <b>NPS ½ to 4</b>                    |
| <b>Pressure rating</b>   | <b>Class 150 and 300</b>             |
| <b>Temperature range</b> | <b>14 to 572 °F (-10 to +300 °C)</b> |

Type 3321 Globe Valves can be equipped with either electro-pneumatic, pneumatic or electric actuators:

- Electropneumatic actuators with integrated or mounted i/p positioner (Type 3321-IP Control Valve)
- Pneumatic actuators (Type 3321-PP Control Valve)
- Electric actuators (Type 3321-E1 or Type 3321-E3 Control Valve)

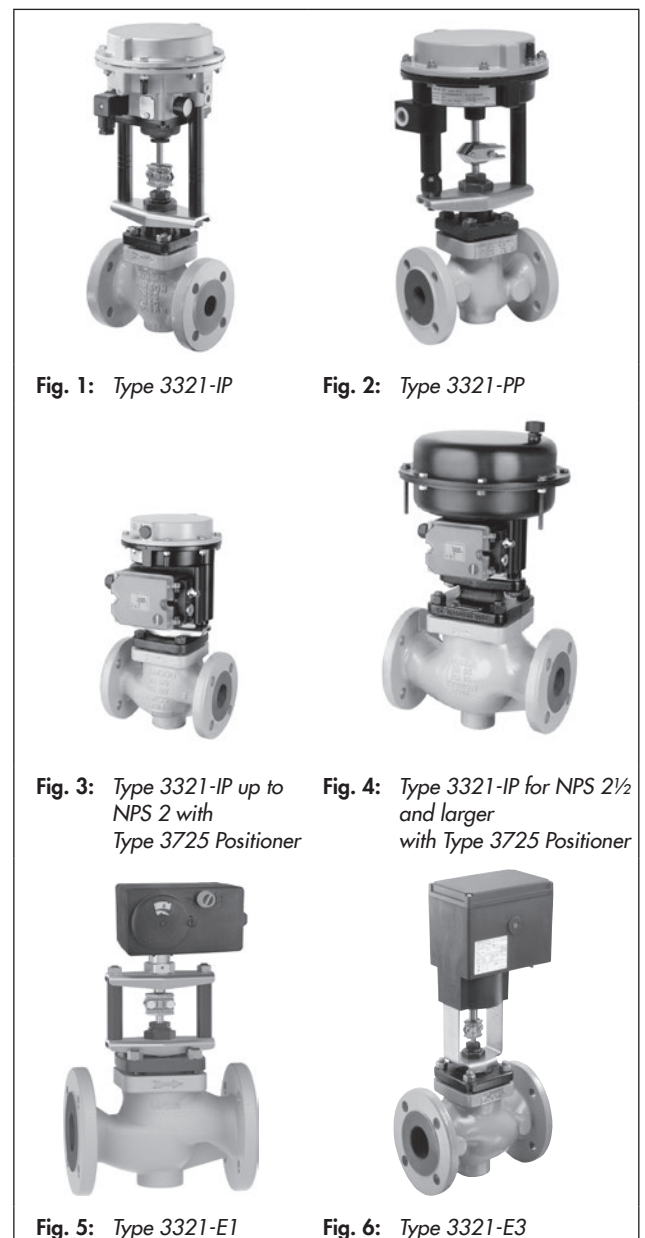
Valve body materials

- Cast iron A126 B for Class 125
- Cast steel A216 WCC for Class 150 or 300
- Stainless steel A351 CF8M for Class 150 or 300
- Metal or soft-seated valve plug

The control valves can be optionally equipped with positioners, limit switches or contacts and resistance transmitters.

#### Versions

- **Type 3321-IP Electropneumatic Globe Valve** · With Type 3372 Electropneumatic Actuator, optionally with integrated positioner (120 cm<sup>2</sup> only, with plug connector, see Fig. 1) or Type 3725 Positioner (Fig. 3, Fig. 4), tight-closing function for completely venting or filling the actuator with air, 4 to 20 mA reference variable, max. 90 psi (6 bar) supply air, fail-close or fail-open, optionally with limit switch
- **Type 3321-PP Pneumatic Globe Valve** (Fig. 2) with Type 3371 Pneumatic Actuator with 120 cm<sup>2</sup> (up to NPS 2) or Type 3371 with 350 cm<sup>2</sup> (NPS 2½ and larger), fail-close or fail-open, optionally with limit switch
- **Type 3321-E1 Electric Globe Valve** (Fig. 5) · NPS ½ to 2 with Type 5824-30 or Type 5827-N3 Electric Actuator for 230 V/50 Hz or 24 V/50 Hz, optionally with limit contacts, resistance transmitter, positioner
- **Type 3321-E3 Electric Globe Valve** (Fig. 6) · With Type 3374 Electric Actuator for 230 V/50 Hz, 230 V/60 Hz, 24 V/50 Hz or 24 V/60 Hz, optionally with fail-safe action (tested according to DIN EN 14597 with actuator stem extends), limit contacts, resistance transmitter, positioner



### Further versions

- **Explosion-protected version** with electric actuators · On request
- **Type 3321 according to DIN standards** · See Data Sheet ▶ T 8111
- **Insulating section**
- **Flow divider ST 1** for noise reduction

### Principle of operation

The process medium flows through the valve in the direction indicated by the arrow in the flow-to-open direction (Fig. 8, Fig. 9). The valve plug position determines the cross-sectional area between the seat and plug. The plug stem is connected to the actuator stem by the stem connector and sealed with a self-adjusting packing.

### Fail-safe action

The control valve has two different fail-safe positions that become effective when the supply air fails:

- **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.

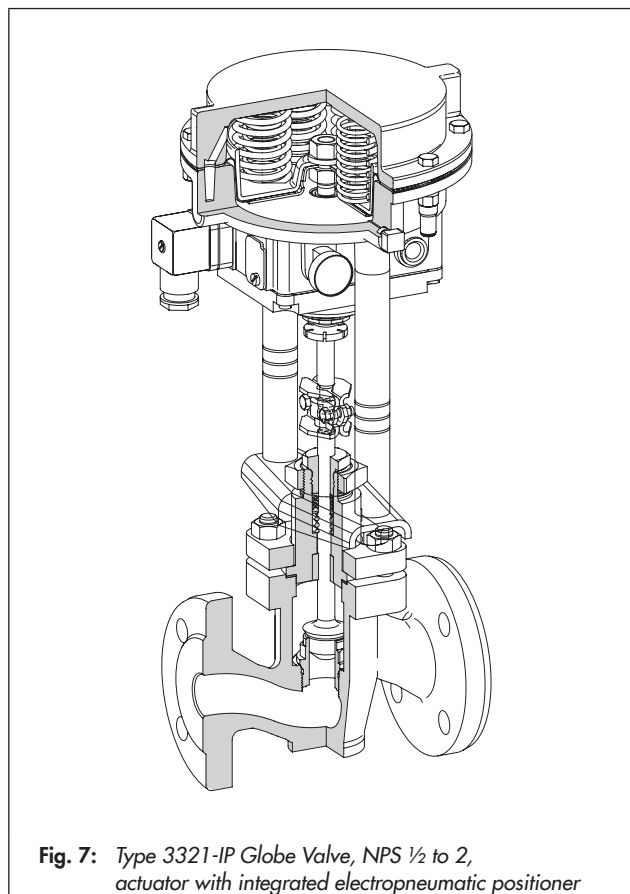


Fig. 7: Type 3321-IP Globe Valve, NPS 1/2 to 2, actuator with integrated electropneumatic positioner

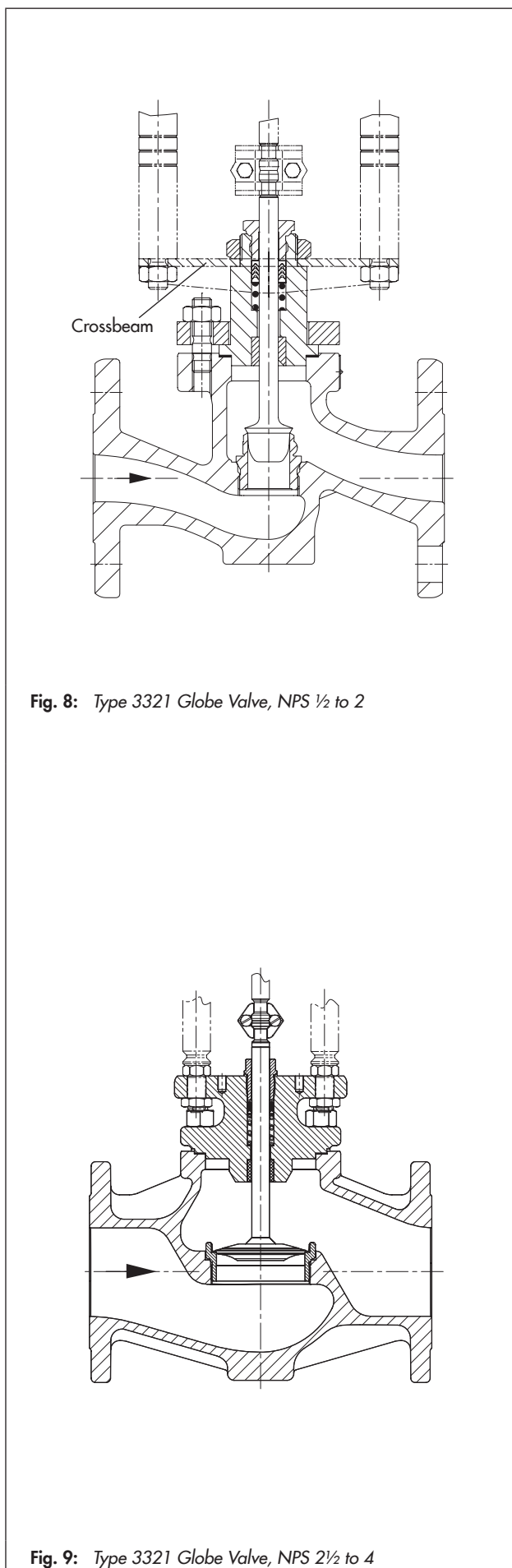


Fig. 8: Type 3321 Globe Valve, NPS 1/2 to 2

Fig. 9: Type 3321 Globe Valve, NPS 2 1/2 to 4

### Associated documentation

Valve and actuator are delivered separately. Instructions on how to mount the valve on the actuator can be found in the mounting and operating instructions delivered with the product:

- ▶ EB 8111                                   Type 3321 Globe Valve
- ▶ EB 8313-1 and                           Actuator for Type 3321-IP
- ▶ EB 8313-3

- ▶ EB 8317                                   Actuator for Type 3321-PP
- ▶ EB 5824-1
- ▶ EB 5824-2                               Actuator for Type 3321-E1
- ▶ EB 5827-1
- ▶ EB 5827-2
- ▶ EB 8331-1                               Actuator for Type 3321-E3
- ▶ EB 8331-4

**Table 1:** Type 3321 Globe Valve

**Table 1.1:** Technical data

| Valve size                               | NPS     | 1 · 1½ · 2 · 2½ · 3 · 4                         | ½ · ¾ · 1 · 1½ · 2 · 2½ · 3 · 4  |
|--|---------|---|----------------------------------|
| Material                                 |         | A126 B  | A216 WCC · A351 CF8M             |
| Connection                               | Flanges | Flat face (FF)                                  | Raised face · Ra = 3.2 to 6.3 µm |
| Pressure rating                          |         | Class 125                                       | Class 150 or 300                 |
| Seat-plug seal                           |         | Metal or soft sealing                           |                                  |
| Characteristic                           |         | Inherent characteristic according to ▶ T 8000-3 |                                  |
| Rangeability                             |         | 50:1 for NPS ½ to 2 · 30:1 for NPS 2½ to 4      |                                  |
| Medium temperature range                 |         | 14 to 430 °F · (-10 to +220 °C)                 |                                  |
| With insulating section <sup>1)</sup>    |         | 14 to 572 °F · (-10 to +300 °C)                 |                                  |
| Leakage class according to ANSI/FCI 70-2 |         | Metal seal: IV<br>Soft seal: VI                 |                                  |
| Conformity                               |         | CE · UK · EAC                                   |                                  |

<sup>1)</sup> Not in stainless steel with NPS 2½ to 4

**Table 1.2:** Materials

| Valve size                 | NPS  | ½ · ¾ · 1 · 1½ · 2 · 2½ · 3 · 4                        |  |   |
|----------------------------|------|--|--|---|
| Valve body                 |      | A126 B   | Cast steel · A216 WCC                            | Stainless steel · A351 CF8M   |
| Valve bonnet               |      | Up to NPS 2: A105<br>NPS 2½ and larger: A216 B         | Up to NPS 2: A105<br>NPS 2½ and larger: A216 WCC | Up to NPS 2: A182 F316<br>NPS 2½ and larger: CF8M                                   |
| Valve flange <sup>1)</sup> |      | A105   |  |   |
| Seat and plug              | Seat | NPS ½ to 2: A582 430F<br>NPS 2½ and larger: A276 410 T |  | NPS ½ to 2: CF3M/F316/<br>F316L/316/316L<br>NPS 2½ and larger: in the<br>valve body |
|                            | Plug | A479 316/A479 316L                                     |  |   |
| Seal for soft-seated plug  |      | PTFE with glass fiber                                  |  |   |
| Guide bushing              |      | A582 430F  |  | A182 F316L  |
| Packing                    |      | V-ring packing: PTFE with carbon                       |  |   |
| Body gasket                |      | Graphite on metal core                                 |  |   |

<sup>1)</sup> No contact with process medium; only up to NPS 2. For NPS 2½ and larger: one-pieced (see valve bonnet for material)

**Table 1.3:** Overview: Valve sizes,  $C_V$  and  $C_{V1}$  coefficients (with flow divider ST 1) and seat diameters

| Valve size             | NPS        | ½             |      | ¾    |     | 1    |      | 1½   |      | 2    |      | 2½   |      | 3    |      | 4    |      |      |                |
|------------------------|------------|---------------|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------|
|                        | DN         | 15            |      | 20   |     | 25   |      | 40   |      | 50   |      | 65   |      | 80   |      | 100  |      |      |                |
| Flow rate              | $C_V$      | 0.3           | 0.75 | 2    | 5   | 3    | 7.5  | 5    | 12   | 12   | 30   | 20   | 40   | 47   | 120  | 47   | 120  | 47   | 190            |
|                        | $K_{VS}$   | 0.25          | 0.63 | 1.6  | 4   | 2.5  | 6.3  | 4    | 10   | 10   | 25   | 16   | 35   | 40   | 100  | 40   | 100  | 40   | 160            |
| With flow divider ST 1 | $C_{V-1}$  | -             |      | 1.7  | 4.2 | 2.6  | 7    | 4.2  | 10.5 | 10.5 | 26   | 17   | 36   | 42   | 105  | 42   | 105  | 42   | 170            |
|                        | $K_{VS-1}$ | -             |      | 1.45 | 3.6 | 2.2  | 5.7  | 3.6  | 9    | 9    | 22   | 14.5 | 31   | 36   | 90   | 36   | 90   | 36   | 144            |
| Seat Ø                 | inch       | 0.12          | 0.24 | 0.47 |     | 0.47 | 0.94 | 0.47 | 0.94 | 0.94 | 1.50 | 1.26 | 1.89 | 1.89 | 3.15 | 1.89 | 3.15 | 1.89 | 3.15           |
|                        | mm         | 3             | 6    | 12   |     | 12   | 24   | 12   | 24   | 24   | 38   | 32   | 48   | 48   | 80   | 48   | 80   | 48   | 80             |
| Rated travel           |            | 0.59" · 15 mm |      |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      | 1.18"<br>30 mm |

**Table 2:** *Pneumatic actuators***Table 2.1:** *Technical data*

| Valve/actuator                  | Type 3321-IP/Type 3372   |   |  | Type 3321-PP/Type 3371                     |  |  |  |
|---------------------------------|--|---|--|--|--|--|--|
| Actuator area                   | 120 cm <sup>2</sup>  | 350 cm <sup>2</sup> for<br>C <sub>V</sub> 190 | 350 cm <sup>2</sup> for<br>C <sub>V</sub> 47 and 117 | 120 cm <sup>2</sup>                        | 350 cm <sup>2</sup><br>C <sub>V</sub> 190  | 350 cm <sup>2</sup> for<br>C <sub>V</sub> 47 and 117 |  |
| Fail-safe position              | Fail-close or fail-open  |   |  |  |  |  |  |
| Reference variable              | 4 to 20 mA   |   |  | -  |  |  |  |
| Bench range/rated travel        | Fail-close   | 30 to 48 psi/<br>15 mm (2.1 to<br>3.3 bar)    | 32 to 55 psi/<br>30 mm (2.2 to<br>3.8 bar)           | 30 to 39 psi/<br>15 mm (2.1 to<br>2.7 bar) | 30 to 48 psi/<br>15 mm (2.1 to<br>3.3 bar) | 32 to 55 psi/<br>30 mm (2.2 to<br>3.8 bar)           | 30 to 39 psi/<br>15 mm (2.1 to<br>2.7 bar) |
|                                 | Fail-open  | 6 to 20 psi/<br>15 mm (0.4 to<br>1.4 bar)     | 22 to 39 psi/<br>30 mm (1.5 to<br>2.7 bar)           | 22 to 30 psi/<br>15 mm (1.5 to<br>2.1 bar) | 6 to 20 psi/<br>15 mm (0.4 to<br>1.4 bar)  | 22 to 39 psi/<br>30 mm (1.5 to<br>2.7 bar)           | 22 to 30 psi/<br>15 mm (1.5 to<br>2.1 bar) |
| Hysteresis                      | ≤1 %   |   |  | -  |  |  |  |
| Variable position               | ≤7 %   |   |  | -  |  |  |  |
| Degree of protection            | IP 54 with integrated positioner (only for 120 cm <sup>2</sup> )<br>IP 66 with Type 3725         |   |  | -  |  |  |  |
| Permissible ambient temperature | Standard: -4 to +176 °F (-20 to +80 °C)<br>With metal cable gland: -22 to +176 °F (-30...+80 °C) |   |  | -31 to +194 °F<br>(-35 to +90 °C)          |  |  |  |
| Actuator data                   | ▶ T 8313   |   |  | ▶ T 8317                                   |  |  |  |

**Table 2.2:** *Materials*

| Actuator                       | Type 3372             |                     | Type 3371           |                     |
|--------------------------------|-----------------------|---------------------|---------------------|---------------------|
| Actuator area                  | 120 cm <sup>2</sup>   | 350 cm <sup>2</sup> | 120 cm <sup>2</sup> | 350 cm <sup>2</sup> |
| Actuator housing               | GD-ALSi12             | 1.0330              | GD-ALSi12           | 1.0330              |
| Diaphragm                      | NBR                   |                     | NBR                 |                     |
| Actuator stem                  | 1.4305                | 1.4571              | 1.4305              | 1.4571              |
| Positioner housing             |                       |                     |                     |                     |
| Integrated version             | POM-GF                | -                   | -                   | -                   |
| Type 3725                      | Polyphthalamide (PPA) |                     | -                   |                     |
| Yoke                           |                       |                     |                     |                     |
| Stem                           | 9SMn28K               | 1.0715+C            | 9SMn28K             | 1.0715+C            |
| Bracket                        | 1.4301                | -                   | 1.4301              | -                   |
| Mounting bracket for Type 3725 | Aluminum              |                     | -                   |                     |

**Table 2.3:** *Permissible differential pressures for metal-seated plug · · Fail-close*

| Actuator area   | cm <sup>2</sup> | 120                                  |          | 350        |            |
|-----------------|-----------------|--------------------------------------|----------|------------|------------|
|                 |                 | psi                                  | 30 to 48 |            | 30 to 39   |
| Bench range     | bar             | 2.1 to 3.3                           |          | 2.1 to 2.7 | 2.2 to 3.8 |
|                 | mm              | 15                                   |          | 15         | 30         |
| Supply pressure | psi             | 55 to 90                             |          | 62 to 90   |            |
|                 | bar             | 3.7 to 6.0                           |          | 4.3 to 6.0 |            |
| C <sub>V</sub>  | K <sub>VS</sub> | Δp when p <sub>2</sub> = 0 psi (bar) |          |            |            |
| 0.3 to 5        | 0.25 to 4.0     | 695 (48)                             | -        | -          | -          |
| 7.5 · 12        | 6.3 · 10        | 580 (40)                             | -        | -          | -          |
| 20              | 16              | 360 (25)                             | -        | -          | -          |
| 30              | 25              | 250 (17)                             | -        | -          | -          |
| 40              | 35              | 160 (11)                             | -        | -          | -          |
| 47              | 40              | 145 (10) <sup>1)</sup>               | 490 (34) | -          | -          |
| 120             | 100             | 43 (3) <sup>1)</sup>                 | 145 (10) | -          | -          |
| 190             | 160             | -                                    | -        | -          | 145 (10)   |

<sup>1)</sup> Mounting without crossbeam on actuator (form C attachment), see ▶ EB 8313-3 and ▶ EB 8317

**Table 2.4:** Permissible differential pressures for metal-seated plug · Fail-open

| Actuator area   |             | cm <sup>2</sup>                     | 120                   |                        |           | 350        |            |            |            |
|-----------------|-------------|-------------------------------------|-----------------------|------------------------|-----------|------------|------------|------------|------------|
| Bench range     | psi         |                                     | 6 to 20               |                        |           | 22 to 30   | 22 to 39   | 22 to 30   | 22 to 39   |
|                 | bar         |                                     | 0.4 to 1.4            |                        |           | 1.5 to 2.1 | 1.5 to 2.7 | 1.5 to 2.1 | 1.5 to 2.7 |
| Valve travel    | mm          |                                     | 15                    |                        |           | 15         | 30         | 15         | 30         |
| Supply pressure | psi         | 36                                  | 50                    | 64                     | 60        |            | 90         |            |            |
|                 | bar         | 2.5                                 | 3.5                   | 4.4                    | 4.0       |            | 6.0        |            |            |
| $C_v$           | $K_{VS}$    | $\Delta p$ when $p_2 = 0$ psi (bar) |                       |                        |           |            |            |            |            |
| 0.3 to 5        | 0.25 to 4.0 | 695 (48)                            | 695 (48)              | 695 (48)               | –         | –          | –          | –          |            |
| 7.5 to 12       | 6.3 · 10    | 320 (22)                            | 580 (40)              | 580 (40)               | –         | –          | –          | –          |            |
| 20              | 16          | 160 (11)                            | 360 (25)              | 495 (34)               | –         | –          | –          | –          |            |
| 30              | 25          | 115 (8)                             | 250 (17)              | 350 (24)               | –         | –          | –          | –          |            |
| 40              | 35          | 65 (4.5)                            | 145 (10)              | 220 (15)               | –         | –          | –          | –          |            |
| 47              | 40          | 60 (4) <sup>1)</sup>                | 130 (9) <sup>1)</sup> | 220 (15) <sup>1)</sup> | 390 (27)  | –          | 580 (40)   | –          |            |
| 120             | 100         | –                                   | 45 (3) <sup>1)</sup>  | 65 (4.5) <sup>1)</sup> | 140 (9.5) | –          | 320 (22)   | –          |            |
| 190             | 160         | –                                   | –                     | –                      | –         | 140 (9.5)  | –          | 320 (22)   |            |

<sup>1)</sup> Mounting without crossbeam on actuator (form C attachment), see ► EB 8313-3 and ► EB 8317

**Table 2.5:** Permissible differential pressures for soft-seated plug · Fail-close

| Actuator area   |             | cm <sup>2</sup>                     | 120        |          | 350        |   |            |
|-----------------|-------------|-------------------------------------|------------|----------|------------|---|------------|
| Bench range     | psi         |                                     | 30 to 48   |          | 30 to 39   |   | 32 to 55   |
|                 | bar         |                                     | 2.1 to 3.3 |          | 2.1 to 2.7 |   | 2.2 to 3.8 |
| Valve travel    | mm          |                                     | 15         |          | 15         |   | 30         |
| Supply pressure | psi         |                                     | 55 to 90   |          | 62 to 90   |   |            |
|                 | bar         |                                     | 3.7 to 6.0 |          | 4.3 to 6.0 |   |            |
| $C_v$           | $K_{VS}$    | $\Delta p$ when $p_2 = 0$ psi (bar) |            |          |            |   |            |
| 0.3 to 5        | 0.25 to 4.0 | 695 (48)                            |            | –        |            | – |            |
| 7.5 to 12       | 6.3 · 10    | 580 (40)                            |            | –        |            | – |            |
| 20              | 16          | 390 (27)                            |            | –        |            | – |            |
| 30              | 25          | 275 (19)                            |            | –        |            | – |            |
| 40              | 35          | 175 (11)                            |            | –        |            | – |            |
| 47              | 40          | 145 (10) <sup>1)</sup>              |            | 520 (36) |            | – |            |
| 120             | 100         | 45 (3) <sup>1)</sup>                |            | 145 (10) |            | – |            |

<sup>1)</sup> Mounting without crossbeam on actuator (form C attachment), see ► EB 8313-3 and ► EB 8317

**Table 2.6:** Permissible differential pressures for soft-seated plug · Fail-open

| Actuator area   |             | cm <sup>2</sup>                     | 120                    |                        |          | 350        |            |            |            |
|-----------------|-------------|-------------------------------------|------------------------|------------------------|----------|------------|------------|------------|------------|
| Bench range     | psi         |                                     | 6 to 20                |                        |          | 22 to 30   | 22 to 39   | 22 to 30   | 22 to 39   |
|                 | bar         |                                     | 0.4 to 1.4             |                        |          | 1.5 to 2.1 | 1.5 to 2.7 | 1.5 to 2.1 | 1.5 to 2.7 |
| Valve travel    | mm          |                                     | 15                     |                        |          | 15         | 30         | 15         | 30         |
| Supply pressure | psi         | 36                                  | 50                     | 64                     | 60       |            | 90         |            |            |
|                 | bar         | 2.5                                 | 3.5                    | 4.4                    | 4.0      |            | 6.0        |            |            |
| $C_v$           | $K_{VS}$    | $\Delta p$ when $p_2 = 0$ psi (bar) |                        |                        |          |            |            |            |            |
| 0.3 to 5        | 0.25 to 4.0 | 695 (48)                            | 695 (48)               | 695 (48)               | –        | –          | –          | –          |            |
| 7.5 to 12       | 6.3 · 10    | 360 (25)                            | 580 (40)               | 580 (40)               | –        | –          | –          | –          |            |
| 20              | 16          | 205 (14)                            | 390 (27)               | 520 (36)               | –        | –          | –          | –          |            |
| 30              | 25          | 140 (9.5)                           | 275 (19)               | 375 (26)               | –        | –          | –          | –          |            |
| 40              | 35          | 90 (6)                              | 175 (12)               | 230 (16)               | –        | –          | –          | –          |            |
| 47              | 40          | 65 (4.5) <sup>1)</sup>              | 145 (10) <sup>1)</sup> | 220 (15) <sup>1)</sup> | 420 (29) | –          | 580 (40)   | –          |            |
| 120             | 100         | –                                   | 45 (3) <sup>1)</sup>   | 80 (5.5) <sup>1)</sup> | 145 (10) | –          | 335 (23)   | –          |            |

<sup>1)</sup> Mounting without crossbeam on actuator (form C attachment), see ► EB 8313-3 and ► EB 8317

**Table 3:** Electric actuators

**Table 3.1:** Permissible differential pressures for metal-seated plug · All pressures in psi (bar)

| Globe valve       |                   | Type           | 3321-E1                             | 3321-E3     |             |                      |
|-------------------|-------------------|----------------|-------------------------------------|-------------|-------------|----------------------|
| With actuator     |                   | Type           | 5824-30/5827-N3                     | 3374-10/-11 | 3374-21/-31 | 3374-10/-11          |
| Positioning force |                   |                | 0.7 kN                              | 1.25 kN     | 2.0 kN      | 2.5 kN               |
| $C_v$             | $K_{vs}$          |                | $\Delta p$ when $p_2 = 0$ psi (bar) |             |             |                      |
| 0.3 to 5          | 0.25 to 4.0       |                | 695 (48)                            | 695 (48)    | 695 (48)    | 695 (48)             |
| 7.5 · 12          | 6.3 · 10          |                | 130 (9)                             | 261 (18)    | 464 (32)    | 580 (40)             |
| 20                | 16                |                | 65 (4.5)                            | 130 (9)     | 250 (17)    | 360 (25)             |
| 30                | 25                |                | 43 (3)                              | 87 (6)      | 175 (12)    | 250 (17)             |
| 40                | 35                |                | 21 (1.5)                            | 43 (3)      | 101 (7)     | 145 (10)             |
| 47                | 40                |                | –                                   | 43 (3)      | 108 (7.5)   | 145 (10)             |
| 120               | 100               |                | –                                   | –           | 29 (2)      | 43 (3)               |
| 190 <sup>1)</sup> | 160 <sup>1)</sup> |                | –                                   | –           | –           | 43 (3) <sup>2)</sup> |
| Actuator data     |                   | See Data Sheet | ▶ T 5824/ ▶ T 5827                  |             | ▶ T 8331    |                      |

<sup>1)</sup> With 30 mm travel

<sup>2)</sup> Only with Type 3374-10

**Table 3.2:** Permissible differential pressures for soft-seated plug · All pressures in psi (bar)

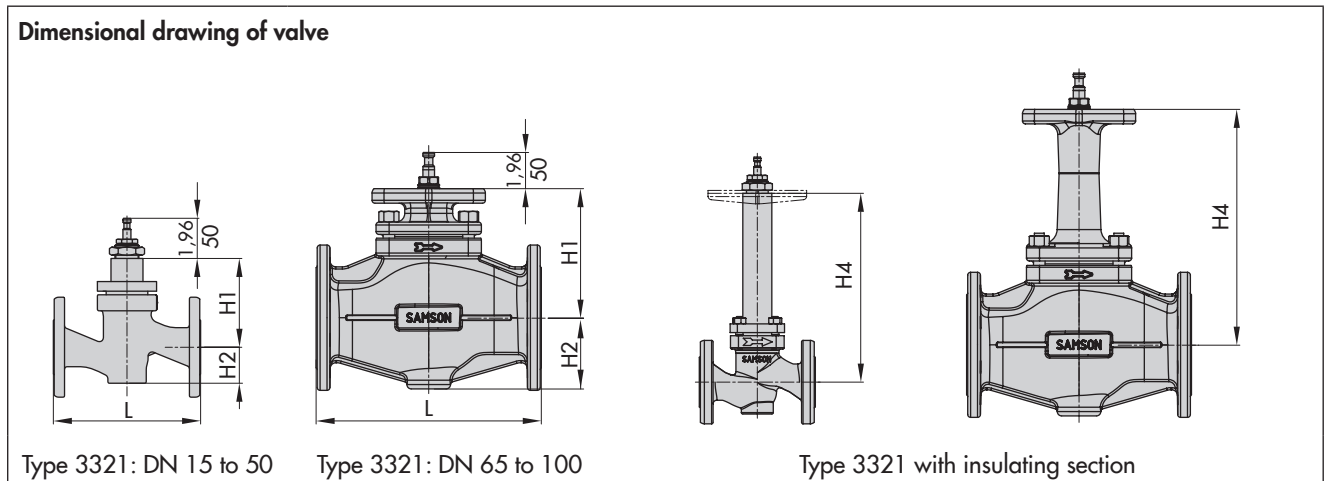
| Globe valve       |             | Type           | 3321-E1                             | 3321-E3     |             |             |
|-------------------|-------------|----------------|-------------------------------------|-------------|-------------|-------------|
| With actuator     |             | Type           | 5824-30/5827-N3                     | 3374-10/-11 | 3374-21/-31 | 3374-10/-11 |
| Positioning force |             |                | 0.7 kN                              | 1.25 kN     | 2.0 kN      | 2.5 kN      |
| $C_v$             | $K_{vs}$    |                | $\Delta p$ when $p_2 = 0$ psi (bar) |             |             |             |
| 0.3 to 5          | 0.25 to 4.0 |                | 695 (48)                            | 695 (48)    | 695 (48)    | 695 (48)    |
| 7.5 · 12          | 6.3 · 10    |                | 175 (12)                            | 304 (21)    | 464 (32)    | 580 (40)    |
| 20                | 16          |                | 94 (6.5)                            | 175 (12)    | 250 (17)    | 390 (27)    |
| 30                | 25          |                | 65 (4.5)                            | 116 (8)     | 175 (12)    | 275 (19)    |
| 40                | 35          |                | 43 (3)                              | 72 (5)      | 101 (7)     | 175 (12)    |
| 47                | 40          |                | –                                   | 72 (5)      | 130 (9)     | 145 (10)    |
| 120               | 100         |                | –                                   | –           | 43 (3)      | 58 (4)      |
| Actuator data     |             | See Data Sheet | ▶ T 5824/ ▶ T 5827                  |             | ▶ T 8331    |             |

**Table 4:** Type of attachment and required adapter

| Type 3321 Valve   |          |    | NPS ½ to 2                       | NPS 2½ to 4                         |
|---|----------|----|----------------------------------|-------------------------------------|
| Type 3372 Actuator with connector (Fig. 1)                    | Version: | IP | Mounting with crossbeam (form B) | –                                   |
| Type 3372 Actuator with Type 3725 Positioner (Fig. 3, Fig. 4) |          | IP | Mounting with crossbeam (form B) | Mounting without crossbeam (form C) |
| Type 5824-30 Actuator/Type 5827-N3 Actuator (Fig. 5)          |          | E1 | With adapter (1400-7414)         | –                                   |
| Type 3374-11/-21/-31 Actuator (Fig. 6)                        |          | E3 | Mounting with crossbeam (form B) | With adapter (1400-9515)            |
| Type 3374-10 Actuator   |          | E3 | –                                | With adapter (1400-9515)            |
| Type 3371 Actuator (Fig. 2)                                   |          | PP | Mounting with crossbeam (form B) | Mounting without crossbeam (form C) |

**Table 5: Dimensions and weights for Type 3321 Valve**

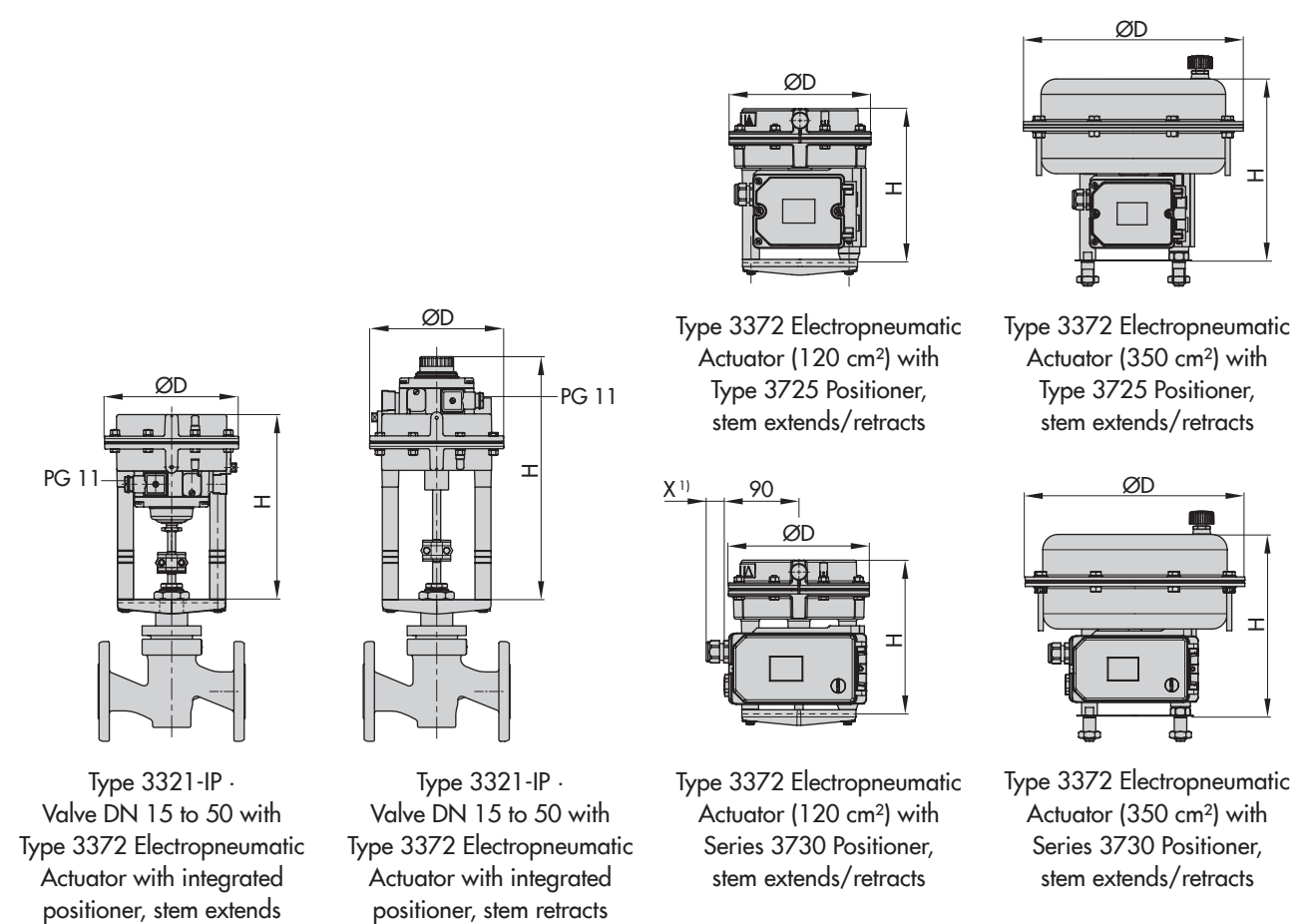
| Valve size                          | NPS | ½    | ¾    | 1    | 1½   | 2     | 2½    | 3     | 4     |
|-------------------------------------|-----|------|------|------|------|-------|-------|-------|-------|
|                                     | DN  | 15   | 20   | 25   | 40   | 50    | 65    | 80    | 100   |
| L<br>Class 150                      | in  | 7.25 | 7.25 | 7.25 | 8.75 | 10.0  | 10.87 | 11.75 | 13.87 |
|                                     | mm  | 184  | 184  | 184  | 222  | 254   | 276   | 298   | 352   |
| L<br>Class 300                      | in  | 7.50 | 7.62 | 7.75 | 9.25 | 10.50 | 11.50 | 12.50 | 14.50 |
|                                     | mm  | 191  | 194  | 197  | 235  | 267   | 292   | 318   | 368   |
| H1                                  | in  | 4.3  | 4.3  | 4.3  | 4.5  | 4.5   | 7.0   | 7.0   | 7.9   |
|                                     | mm  | 110  | 110  | 110  | 115  | 115   | 178   | 178   | 201   |
| H2                                  | in  | 1.6  | 1.6  | 1.6  | 2.8  | 2.8   | 3.9   | 3.9   | 4.4   |
|                                     | mm  | 40   | 40   | 40   | 72   | 72    | 98    | 98    | 113   |
| H4 (with<br>insulating section)     | in  | 10.3 | 10.3 | 10.3 | 10.4 | 10.4  | 12.8  | 12.8  | 12.8  |
|                                     | mm  | 261  | 261  | 261  | 265  | 265   | 325   | 325   | 325   |
| Weight                              | lbs | 14   | 16   | 18   | 27   | 36    | 58    | 71    | 97    |
|                                     | kg  | 6    | 7    | 8    | 12   | 16    | 26    | 32    | 44    |
| Weight (with<br>insulating section) | lbs | 19.8 | 22.1 | 24.3 | 39.7 | 48.5  | 75    | 88.2  | 136.7 |
|                                     | kg  | 9    | 10   | 11   | 18   | 22    | 34    | 40    | 62    |



**Table 6: Dimensions and weights for Type 3372 Electropneumatic Actuator**

| Positioner                       |                 | Integrated   |               | Type 3725             |      |
|----------------------------------|-----------------|--------------|---------------|-----------------------|------|
| Actuator area                    | cm <sup>2</sup> | 120          | 120           | 120                   | 350  |
| Fail-safe position <sup>1)</sup> |                 | Stem extends | Stem retracts | Stem extends/retracts |      |
| Height H                         | in              | 9.3          | 12.2          | 7.2                   | 9.1  |
|                                  | mm              | 236          | 309           | 182                   | 231  |
| ØD                               | in              | 6.6          | 6.6           | 6.6                   | 11.0 |
|                                  | mm              | 168          | 168           | 168                   | 280  |
| Weight (without positioner)      | lbs             | 8.2          | 8.2           | 7.3                   | 33.1 |
|                                  | kg              | 3.7          | 3.7           | 3.3                   | 15   |

**Dimension diagrams for electropneumatic control valves**



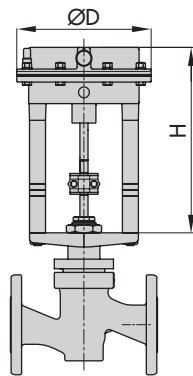
<sup>1)</sup> The dimension X depends on the cable gland used.



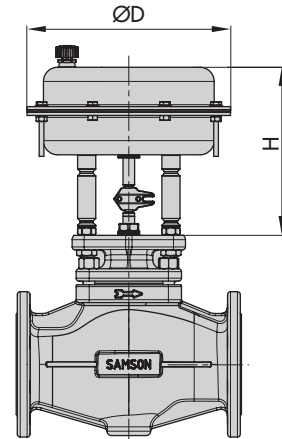
**Table 7:** Dimensions and weights for Type 3371 Pneumatic Actuator

| Actuator area      | cm <sup>2</sup> | 120                   | 350                   |
|--------------------|-----------------|-----------------------|-----------------------|
| Fail-safe position |                 | Stem extends/retracts | Stem extends/retracts |
| Height H           | in              | 7.2                   | 9.1                   |
|                    | mm              | 182                   | 231                   |
| ØD                 | in              | 6.6                   | 11.0                  |
|                    | mm              | 168                   | 280                   |
| Weight             | lbs             | 7.3                   | 33.1                  |
|                    | kg              | 3.3                   | 15                    |

**Dimension diagrams for pneumatic control valves**



Type 3321-PP ·  
Valve DN 15 to 50 with Type 3371 Pneumatic Actuator  
(120 cm<sup>2</sup>), stem extends/retracts

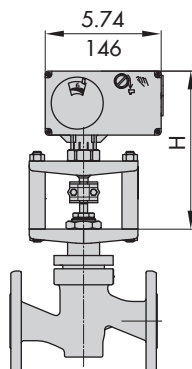


Type 3321-PP ·  
Valve DN 65 to 100 with Type 3371 Pneumatic Actuator  
(350 cm<sup>2</sup>), stem extends/retracts

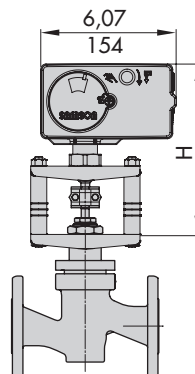
**Table 8:** Dimensions and weights for Type 5824, Type 5827 and Type 3374 Electric Actuators

| Type          |     | 5824 | 5827 | 3374 |
|---------------|-----|------|------|------|
| Height H      | in  | 8.0  | 8.1  | 11.6 |
|               | mm  | 203  | 206  | 294  |
| Weight (max.) | lbs | 2.8  | 2.8  | 8.8  |
|               | kg  | 1.25 | 1.25 | 4    |

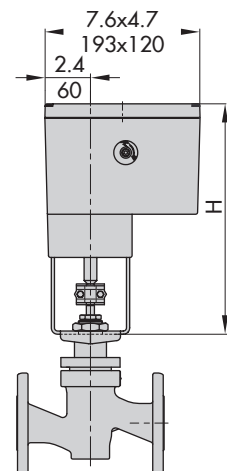
**Dimension diagrams for electric control valves**



Type 3321-E1 ·  
Valve with Type 5824 Electric Actuator



Type 3321-E1 ·  
Valve with Type 5827 Electric Actuator



Type 3321-E3 ·  
Valve with Type 3374 Electric Actuator

## Ordering text

The following specifications are required on ordering:

### Type 3321 Globe Valve

|                   |   |
|-------------------|---|
| Valve size        | NPS ...                                     |
| Flow coefficients | $C_v$ ... or $K_{vs}$ ...                   |
| Pressure rating   | Class 150 or 300                            |
| Body material     | Cast iron, cast steel or stainless steel    |
| Seat-plug seal    | - Metal seal<br>- Soft seal                 |
| Options           | - Flow divider ST 1<br>- Insulating section |

### Actuators

for **Type 3321-IP**: Type 3372 Electropneumatic Actuator

120 cm<sup>2</sup> actuator area:

- with integrated positioner, 4 to 20 mA
- with Type 3725/Series 3730 Positioner

350 cm<sup>2</sup> actuator area:

- with Type 3725/Series 3730 Positioner

Optional Intrinsicly safe Ex ia

Additional equipment 1 or 2 limit switches

for **Type 3321-PP**: Type 3371 Pneumatic Actuator

Fail-safe position Fail-close or fail-open

Bench range Fail-close: 30 to 48 psi  
(1.4 to 2.3 bar)

Fail-open: 6 to 20 psi (0.4 to 1.4 bar)

Additional equipment 1 or 2 limit switches

For **Type 3321-E1**: Type 5824-30 or Type 5827-N3 Electric Actuator

Supply voltage - 230 V/50 Hz  
- 24 V/50 Hz

Additional equipment - Limit contact 2  
- Resistance transmitter 0 to 1000  $\Omega$   
- Digital positioner:  
- Input: 0/4 to 20 mA or 0/2 to 10 V  
- Output: 0/2 to 10 V

For **Type 3321-E3**: Type 3374 Electric Actuator

Fail-safe action With fail-safe action: Actuator stem extends or retracts

Thrust

With fail-safe action 2 kN (actuator stem extends)  
500 N (actuator stem retracts)

Without fail-safe action 1.25 kN; 2.5 kN

Supply voltage - 230 V/50 Hz  
- 230 V/60 Hz  
- 24 V/50 Hz  
- 24 V/60 Hz

Additional equipment - Limit contact 2  
- Resistance transmitter 0 to 1000  $\Omega$   
- Digital positioner with input and output 0/4 to 20 mA or 0/2 to 10 V