

T 8052-E EN

Series 250 · Type 3251-E-1 and Type 3251-E-7 Pneumatic Control Valves

Type 3251-E Globe Valve

ANSI version



Application

Control valve for process engineering applications with high industrial requirements

| | |
|------------------------|--------------------------------------|
| Valve size | NPS 3 to 8 |
| Pressure rating | Class 600 |
| Temperatures | 14 to 662 °F (–10 to +350 °C) |

Type 3251-E Globe Valve operated with

- Type 3271 Pneumatic Actuator (Type 3251-E-1 Control Valve)
- Type 3277 Pneumatic Actuator (Type 3251-E-7 Control Valve) for integral positioner attachment

Special features

- Plug and cage trim replaceable in the field
- Body made of cast steel
- Body made of cast stainless steel
- Metal seal
- High-performance metal seal
- Balanced to handle high differential pressures

Optional with RFID tags with one-to-one device marking according to DIN SPEC 91406.

The control valves with their modular design can be equipped with various accessories:

Positioners, limit switches, solenoid valves and other valve accessories according to IEC 60534-6-1 ¹⁾ and NAMUR recommendation (see Information Sheet ▶ T 8350).

Versions

Standard version with PTFE packing for temperatures from 14 to 482 °F (–10 to +250 °C) or with adjustable high-temperature packing from 14 to 662 °F (–10 to +350 °C), valve size NPS 3 to 8, Class 600 (see Table 1)

- **Type 3251-E-1** (Fig. 1) · Type 3251-E Valve and Type 3271 Actuator with 350 to 2800 cm² actuator area (▶ T 8310-1, ▶ T 8310-2 and ▶ T 8310-3)
- **Type 3251-E-7** · Type 3251-E Valve and Type 3277 Actuator with 350 to 750v2 cm² actuator area for integral positioner attachment (see Data Sheet ▶ T 8310-1)

Further versions

- **Valve plug with pressure balancing**
- **Additional handwheel** · See Data Sheet ▶ T 8310-1

¹⁾ Accessories required. See associated actuator documentation.



Fig. 1: Type 3251-E-1 Pneumatic Control Valve with Type 3271 Pneumatic Actuator

- **Type 3251-E Valve with Type 3273 Hand-operated Actuator** · For valves with max. 30 mm rated travel and side-mounted handwheel for travel > 30 mm · See Data Sheet ▶ T 8312
- **Type 3251-E-2 Electric Control Valve** · Details on request
- Version with clamped-in or screwed-in seat or with cage trim

Principle of operation of version with clamped-in/screwed-in seat

The medium flows through the valve in the direction indicated by the arrow. The valve plug determines the cross-sectional area of flow.

The valves can be equipped with a flow divider ST 1 (see Data Sheet ▶ T 8081) for noise reduction.

Pressure balancing must be used when high pressures or differential pressures act on the plug.

Fig. 2 and Fig. 3 show configuration examples.

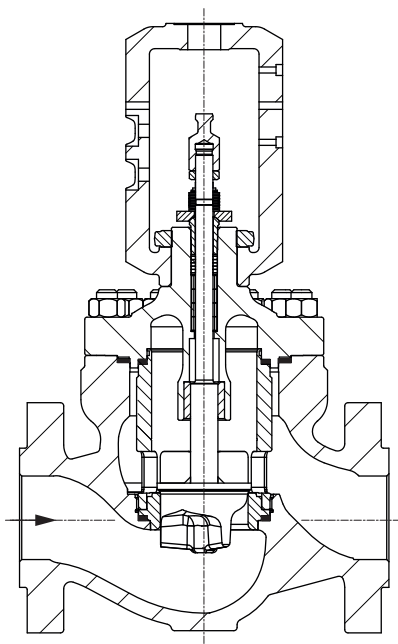


Fig. 2: Type 3251-E Valve with clamped-in seat

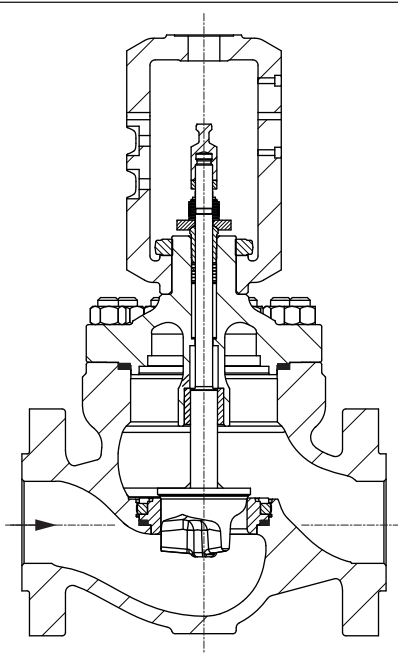


Fig. 3: Type 3251-E Valve with screwed-in seat

Principle of operation of cage version

The medium flows through the valve as indicated by the arrow on the valve body. A change in the pneumatic signal acting on the actuator changes the piston travel and how far the valve is opened as a result. The piston position and cage design determine the released cross-section and the resulting flow rate.

Fig. 4 shows a configuration example.

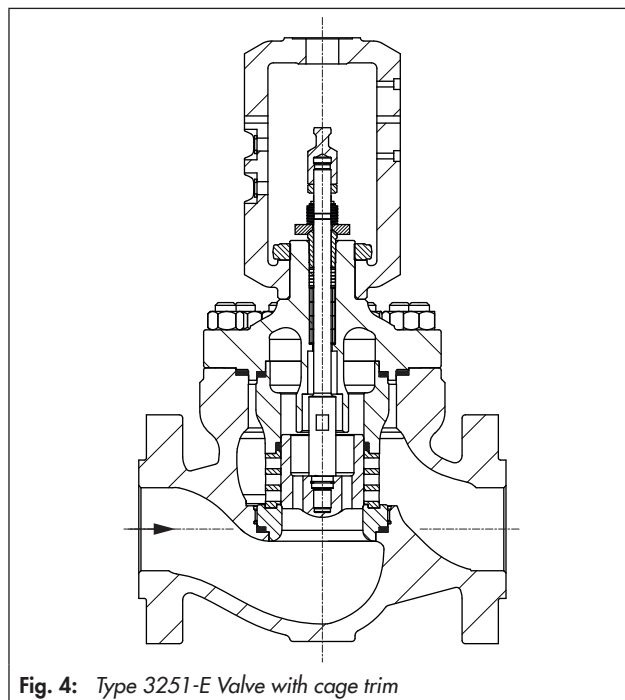


Fig. 4: Type 3251-E Valve with cage trim

All the trims shown in Fig. 2 to Fig. 4 are interchangeable in the field without any revisions necessary to the pressure-bearing or pressure-retaining parts.

Fail-safe action

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 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.

Differential pressures

The permissible differential pressures can be found in the Information Sheet ▶ T 8000-4.

Table 1: Technical data for Type 3251-E

| Material | Cast steel A216 WCC | Cast stainless steel A351 CF8M |
|---|---|---|
| Valve size and pressure rating | NPS 3 to 8 in Class 600 | |
| Type of connection | Flanges | RF and RTJ |
| Seat-plug seal | Metal seal · High-performance metal seal | |
| Characteristic | Equal percentage · Linear · Mod. linear · On/off | |
| Rangeability | 50:1 | |
| RFID tag (optional) | Application range according to the technical specifications and the explosion protection certificates. Documents ► www.samsongroup.com > Service & Support > Electronic nameplate | |
| Conformity ³⁾ | CE · EAC | |
| Temperature ranges ²⁾ in °F (°C) · Permissible operating pressures acc. to pressure-temperature diagrams (see Information Sheet ► T 8000-2) | | |
| Body without insulating section | Standard PTFE packing | 14...428 (-10...+220) |
| | LLF20 PTFE packing | 14...482 (-10...+250) |
| | High-temperature packing | 14...662 (-10...+350) |
| Trim ¹⁾ | Metal seal | -325...+1022 (-196...+550) |
| | Balanced with PTFE | -58...+482 (-50...+250) |
| RFID tag (optional) | Max. permissible operating temperature: 185 (85) | |
| Leakage class according to ANSI/FCI 70-2 | | |
| Trim | Metal seal | Standard: IV · High-performance metal seal: V |
| | Balanced, metal seal | With PTFE (standard): IV · High-performance metal seal: V |

¹⁾ Only in combination with suitable body material

²⁾ The temperature limits (in °F and °C) are not directly converted temperatures.

³⁾ Certificates available in 2021

Table 2: Materials

| Standard version | Cast steel A216 WCC | Cast stainless steel A351 CF8M | | | |
|---------------------------------------|--|-----------------------------------|-------------------|---------------------------|---------------------------|
| Bodies and Housings | | | | | |
| Valve bonnet | A216 WCC | A351 CF8M | | | |
| Plug stem | 316/316L or XM-19-H | | | | |
| Seal ring for balanced plug | PTFE with carbon | | | | |
| Guide bushing | 430F nitrated | 316/316L nitrated | | | |
| Packing | PTFE packing loaded by internal or external springs or adjustable graphite packing | | | | |
| Body gasket | Spiral wound gasket, graphite/316L | | | | |
| Version with screwed-in seat and plug | Plug ³⁾ | 410 2 ²⁾ | 420 ¹⁾ | 316/316L ²⁾ | 316/316L ²⁾ |
| | Seat | 410 2 ²⁾ | 420 ¹⁾ | 316/316L ²⁾ | 316/316L ²⁾ |
| | Fastening of the seat | 410 2 | | | 316/316L |
| Version with clamped-in seat and plug | Plug ³⁾ | 410 2 ²⁾ | 420 ¹⁾ | 316/316L ²⁾ | 316/316L ²⁾ |
| | Seat | 410 2 ²⁾ | 420 ¹⁾ | 316/316L ²⁾ | 316/316L ²⁾ |
| | Fastening of the seat | A 217 WC 9 | | | A351 CF8M |
| Version with piston and cage | Piston | 410 2 ¹⁾ | 420 ¹⁾ | 316/316L ^{4) 5)} | 316/316L ^{4) 5)} |
| | Cage | 410 2 ¹⁾ | 420 ¹⁾ | 316/316L | 316/316L |
| | Seat | 410 2 ¹⁾ | 420 ¹⁾ | 316/316L ²⁾ | 316/316L ²⁾ |
| | Cylinder | 410 2 ¹⁾ | 420 ¹⁾ | 316/316L | |

¹⁾ Heat treated

²⁾ Also Stellite®-faced facing

³⁾ Plug made of Stellite® 6 (up to C_v 420) available

⁴⁾ Guiding surface with hard chrome plating

⁵⁾ Guiding surface also Stellite® faced when the facing is Stellite®-faced

Table 3: Flow coefficients · C_v values

Table 3.1: Type 3251-E Valve with screwed-in seat and plug, without flow divider

The versions highlighted in gray are also available with balanced plug.

| Equal percentage and linear | | | | | | | | | |
|-----------------------------|--------------|-----|-----|-----|------|------|------|------|--|
| C_v | 47 | 75 | 120 | 190 | 290 | 420 | 735 | | |
| Travel | in | 1.2 | | | | 2.4 | | | |
| | mm | 30 | | | | 60 | | | |
| NPS | Seat bore in | 2.0 | 2.5 | 3.2 | 3.94 | 4.92 | 5.91 | 7.87 | |
| | mm | 50 | 63 | 80 | 100 | 125 | 150 | 200 | |
| 3 | | • | • | • | | | | | |
| 4 | | | • | • | • | | | | |
| 6 | | | | | • | • | • | | |
| 8 | | | | | | • | • | • | |

| Max. flow rate · Linear | | | | | |
|-------------------------|--------------|-----|------|------|------|
| C_v max | 130 | 220 | 465 | 810 | |
| Travel | in | 1.5 | 2.4 | | 3.5 |
| | mm | 38 | 60 | | 90 |
| NPS | Seat bore in | 3.4 | 4.33 | 6.69 | 8.98 |
| | mm | 85 | 110 | 170 | 228 |
| 3 | | • | | | |
| 4 | | | • | | |
| 6 | | | | • | |
| 8 | | | | | • |

Table 3.2: Type 3251-E Valve with screwed-in seat and plug, with flow divider ST 1

The versions highlighted in gray are also available with balanced plug.

| ST 1 · Equal percentage and linear | | | | | | | | | |
|------------------------------------|--------------|-----|-----|-----|------|------|------|------|--|
| C_v ST 1 | 42 | 67 | 105 | 170 | 265 | 375 | 650 | | |
| Travel | in | 1.2 | | | | 2.4 | | | |
| | mm | 30 | | | | 60 | | | |
| NPS | Seat bore in | 2.0 | 2.5 | 3.2 | 3.94 | 4.92 | 5.91 | 7.87 | |
| | mm | 50 | 63 | 80 | 100 | 125 | 150 | 200 | |
| 3 | | • | • | • | | | | | |
| 4 | | | • | • | • | | | | |
| 6 | | | | | • | • | • | | |
| 8 | | | | | | • | • | • | |

Table 3.3: Type 3251-E Valve with clamped-in seat and plug

The versions highlighted in gray are also available with balanced plug.

| Equal percentage and linear | | | | | | | | | | | | |
|-----------------------------|--------------|-----|-----|-----|------|-----|------|------|-----|------|--|--|
| C_v | 47 | 75 | 105 | 120 | 170 | 190 | 290 | 375 | 420 | 650 | | |
| Travel | in | 1.2 | | | | | 2.4 | | | | | |
| | mm | 30 | | | | | 60 | | | | | |
| NPS | Seat bore in | 2.0 | 2.5 | 3.2 | 3.94 | | 4.92 | 5.91 | | 7.87 | | |
| | mm | 50 | 63 | 80 | 100 | | 125 | 150 | | 200 | | |
| 3 | | • | • | • | | | | | | | | |
| 4 | | | • | • | • | | | | | | | |
| 6 | | | | | | • | • | • | | | | |
| 8 | | | | | | | • | | • | • | | |

| Max. flow rate · Linear | | | | | |
|-------------------------|--------------|-----|------|------|------|
| $C_{V\ max}$ | | 120 | 200 | 420 | 735 |
| Travel | in | 1.5 | 2.4 | | 3.5 |
| | mm | 38 | 60 | | 90 |
| NPS | Seat bore in | 3.4 | 4.33 | 6.69 | 8.98 |
| | mm | 85 | 110 | 170 | 228 |
| 3 | | • | | | |
| 4 | | | • | | |
| 6 | | | | • | |
| 8 | | | | | • |

Table 3.4: Type 3251-E Valve with piston and cage STD, pressure balanced (BSS, balanced single seat)

The versions highlighted in gray are also available with unbalanced plug (USS, unbalanced single seat).

| Equal percentage | | | | | | | | | |
|------------------|--------------|-----|----|-----|-----|-----|-----|-----|-----|
| C_V | | 65 | 90 | 100 | 145 | 235 | 335 | 390 | 580 |
| Travel | in | 1.5 | | 2.4 | | 3.0 | | 3.5 | |
| | mm | 38 | | 60 | | 75 | | 90 | |
| NPS | Seat bore in | 3.0 | | 4.0 | | 6.0 | | 8.0 | |
| | mm | 76 | | 102 | | 152 | | 203 | |
| 3 | | • | • | | | | | | |
| 4 | | | | • | • | | | | |
| 6 | | | | | | • | • | | |
| 8 | | | | | | | | • | • |

| Linear | | | | | | | | | |
|--------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|
| C_V | | 80 | 110 | 130 | 180 | 290 | 420 | 520 | 735 |
| Travel | in | 1.5 | | 2.4 | | 3.0 | | 3.5 | |
| | mm | 38 | | 60 | | 75 | | 90 | |
| NPS | Seat bore in | 3.0 | | 4.0 | | 6.0 | | 8.0 | |
| | mm | 76 | | 102 | | 152 | | 203 | |
| 3 | | • | • | | | | | | |
| 4 | | | | • | • | | | | |
| 6 | | | | | | • | • | | |
| 8 | | | | | | | | • | • |

| Modified linear | | | | | |
|-----------------|--------------|-----|-----|-----|-----|
| C_V | | 120 | 200 | 465 | 810 |
| Travel | in | 1.5 | 2.4 | 3.0 | 3.5 |
| | mm | 38 | 60 | 75 | 90 |
| NPS | Seat bore in | 3.0 | 4.0 | 6.0 | 8.0 |
| | mm | 76 | 102 | 152 | 203 |
| 3 | | • | | | |
| 4 | | | • | | |
| 6 | | | | • | |
| 8 | | | | | • |

| Max. flow rate · Quick opening (modified linear) | | | | | |
|--|----|-----|-----|-----|-----|
| $C_{V \max.}$ | | 135 | 220 | 520 | 880 |
| Travel | in | 1.5 | 2.4 | 3.0 | 3.5 |
| | mm | 38 | 60 | 75 | 90 |
| NPS | in | 3.5 | 4.5 | 7.0 | 9.0 |
| | mm | 89 | 114 | 178 | 229 |
| 3 | | • | | | |
| 4 | | | • | | |
| 6 | | | | • | |
| 8 | | | | | • |

Table 3.5: Type 3251-E Valve with piston and cage (LDB), pressure balanced (BSS, balanced single seat)

The versions highlighted in gray are also available with unbalanced plug (USS, unbalanced single seat).

| Equal percentage | | | | | | | | | |
|------------------|----|-----|----|-----|-----|-----|-----|-----|-----|
| C_V | | 55 | 80 | 90 | 130 | 210 | 300 | 365 | 520 |
| Travel | in | 1.5 | | 2.4 | | 3.0 | | 3.5 | |
| | mm | 38 | | 60 | | 75 | | 90 | |
| NPS | in | 3.0 | | 4.0 | | 6.0 | | 8.0 | |
| | mm | 76 | | 102 | | 152 | | 203 | |
| 3 | | • | • | | | | | | |
| 4 | | | | • | • | | | | |
| 6 | | | | | | • | • | | |
| 8 | | | | | | | | • | • |

| Linear | | | | | | | | | |
|--------|----|-----|-----|-----|-----|-----|-----|-----|-----|
| C_V | | 70 | 100 | 120 | 160 | 265 | 375 | 465 | 650 |
| Travel | in | 1.5 | | 2.4 | | 3.0 | | 3.5 | |
| | mm | 38 | | 60 | | 75 | | 90 | |
| NPS | in | 3.0 | | 4.0 | | 6.0 | | 8.0 | |
| | mm | 76 | | 102 | | 152 | | 203 | |
| 3 | | • | • | | | | | | |
| 4 | | | | • | • | | | | |
| 6 | | | | | | • | • | | |
| 8 | | | | | | | | • | • |

| Modified linear | | | | | |
|-----------------|----|-----|-----|-----|-----|
| C_V | | 110 | 180 | 420 | 735 |
| Travel | in | 1.5 | 2.4 | 3.0 | 3.5 |
| | mm | 38 | 60 | 75 | 90 |
| NPS | in | 3.0 | 4.0 | 6.0 | 8.0 |
| | mm | 76 | 102 | 152 | 203 |
| 3 | | • | | | |
| 4 | | | • | | |
| 6 | | | | • | |
| 8 | | | | | • |

Dimensions for standard version of Type 3251-E-1 and Type 3251-E-7 Pneumatic Control Valves · Class 600

Table 3.6: Type 3251-E Valve

| Valve | NPS | 3 | 4 | 6 | 8 | | | |
|-----------------|--|-----------------------|-----------|-----------|-----------|-----------|-----------|---|
| Length L | Flanges according to ANSI/ISA-75.08.01 | Raised face (RF) | in | 13.3 | 15.5 | 20.0 | 24.0 | |
| | | | mm | 337 | 394 | 508 | 610 | |
| | | Ring joint face (RTJ) | in | 13.4 | 15.6 | 20.1 | 24.1 | |
| | | | mm | 340 | 397 | 511 | 613 | |
| H2 | | in | 4.06 | 5.35 | 7.28 | 8.66 | | |
| | | mm | 103 | 136 | 185 | 220 | | |
| H4 | | in | 8.31 | 11.1 | 14.39 | 17.2 | | |
| | | mm | 211 | 283 | 365.5 | 437 | | |
| H8 for actuator | 175 to 350 cm ² | in | 9.45 | - | - | - | | |
| | | mm | 240 | | | | | |
| | 355 to 750 cm ² | in | 9.45 | 18.9 | 16.5 | - | | |
| | | mm | 240 | 480 | 418 | | | |
| | 1000 to 1400-60 cm ² | in | 11.6 | 16.5 | | | | |
| | | mm | 295 | 418 | | | | |
| | 1400-120 to 2800-120 cm ² | Travel | FA 30-75 | in | 18.9 | 19.8 | | |
| | | | FE 30-38 | mm | 480 | 503 | | |
| | | Travel | FE 30-38 | in | 21.1 | - | - | - |
| | | | | mm | 535 | | | |
| Travel | FA 90-120 | in | - | 25.6 | | | | |
| | | FE 60-120 | mm | - | 651 | | | |
| H9 for actuator | 175 to 350 cm ² | in | 3.0 | - | - | - | | |
| | | mm | 75 | | | | | |
| | 355 to 750 cm ² | in | 3.0 | 3.4 | | - | | |
| | | mm | 75 | 86 | | | | |
| | 1000 to 1400-60 cm ² | in | 4.33 | 5.04 | | | | |
| | | mm | 110 | 128 | | | | |
| | 1400-120 to 2800-120 cm ² | Travel | FA 30-75 | in | 7.09 | 7.68 | | |
| | | | FE 30-38 | mm | 180 | 195 | | |
| | | Travel | FA 90-120 | in | - | 9.45 | | |
| | | | | FE 60-120 | mm | - | 240 | |
| G for actuator | 175 to 350 cm ² | FA/FE | in | 3.0/2.6 | - | - | - | |
| | | | mm | 75/67 | | | | |
| | 355 to 750 cm ² | FA/FE | in | 3.5/3.5 | 3.5/3.7 | | - | |
| | | | mm | 90/90 | 90/93 | | | |
| | 1000 to 1400-60 cm ² | FA/FE | in | 6.50/5.04 | 6.50/6.50 | | 6.50/5.91 | |
| | | | mm | 165/128 | 165/165 | | 165/150 | |
| | 1400-120 cm ² | FA/FE | in | 11.2/9.17 | 11.2/11.2 | | 11.2/12.4 | |
| | | | mm | 285/233 | 285/285 | | 285/315 | |
| | (2x) 2800-120 cm ² | FA/FE | in | 12.4/9.17 | 12.4/11.2 | | 12.4/12.4 | |
| | | | mm | 315/233 | 315/285 | | 315/315 | |
| H5 | | in | 4.13±0.02 | 5.43±0.02 | 7.01±0.02 | 8.27±0.02 | | |
| | | mm | 105±0.5 | 138±0.5 | 178±0.5 | 210±0.5 | | |

Table 3.7: Types 3271 and 3277 Pneumatic Actuators

| Actuator area ¹⁾ | cm ² | 175v2 | 350 | 355v2 | 750v2 | 1000 | 1400-60 | 1400-120 | 2800 | 2 x 2800 |
|--|---|-----------------|-----------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|----------|
| Diaphragm ØD | in | 8.46 | 11.0 | 11.0 | 15.5 | 18.2 | 20.9 | 21.0 | 30.3 | 30.3 |
| | mm | 215 | 280 | 280 | 394 | 462 | 530 | 534 | 770 | 770 |
| H ²⁾ | in | - | - | 4.76 | 9.29 | 15.9 | 13.3 | 23.5 | 28.1 | 47.76 |
| | mm | - | - | 121 | 236 | 403 | 337 | 598 | 713 | 1213 |
| H' | in | 3.1 | 3.2 | 4.76 | 9.29 | 15.9 | 13.3 | 23.5 | 28.1 | 47.76 |
| | mm | 78 | 82 | 121 | 236 | 403 | 337 | 598 | 713 | 1213 |
| H3 | The minimum value corresponds to the dimensions G ³⁾ + 50 mm, based on the highest point of the control valve (H7 or hook-up). | | | | | | | | | |
| H7 ⁴⁾ | in | - | - | - | 2.6 | 3.5 | 3.5 | 5.04 | 5.04 | 5.04 |
| | mm | - | - | - | 65 | 90 | 90 | 128 | 128 | 128 |
| Thread d | M30x1.5 | | | | M60x1.5 | | | M100x2 | | |
| a (optionally G or NPT) | G 1/4 / 1/4 NPT | G 3/8 / 3/8 NPT | G 3/8 / 3/8 NPT | G 3/8 / 3/8 NPT | G 3/4 / 3/4 NPT | G 3/4 / 3/4 NPT | G 1 / 1 NPT | G 1 / 1 NPT | G 1 / 1 NPT | |
| α2 | G 3/8 | G 3/8 | G 3/8 | G 3/8 | - | - | - | - | - | - |
| Heights for versions with external travel stop or additional handwheel | See Data Sheets ▶ T 8310-1, ▶ T 8310-2 and ▶ T 8310-3 | | | | | | | | | |

- ¹⁾ v2 is added to the actuator area (e.g. 175v2 cm²) to indicate actuators with a full diaphragm
²⁾ In versions in which the lifting eyelet is welded directly onto the housing, H' and H are identical. The value H' applies. Actuators up to 355v2 cm² are without lifting eyelet or female thread.
³⁾ See Table 3.6
⁴⁾ Height of eyebolt according to DIN 580. Height of the swivel hoist may differ.

Table 4: Weights for standard version of Type 3251-E-1 and Type 3251-E-7 Pneumatic Control Valves · Class 600
Table 4.1: Type 3251-E Valve with RF and RTJ flanges

| Valve | NPS | Version ¹⁾ | 3 | | | 4 | | | 6 | | | 8 | | |
|--|--------------------------------------|-----------------------|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|------|
| | | | A | B | C | A | B | C | A | B | C | A | B | C |
| Valve without actuator for actuator size | 175 to 750 cm ² | lbs | 141 | 150 | 154 | 255 | 271 | 357 | 549 | 578 | 586 | 836 | 888 | 952 |
| | | kg | 64 | 68 | 70 | 115.5 | 123 | 162 | 249 | 262 | 266 | 379 | 403 | 432 |
| | 1000 to 1400-60 cm ² | lbs | 157 | 163 | 168 | 269 | 284 | 370 | 549 | 578 | 586 | 836 | 888 | 952 |
| | | kg | 71 | 74 | 76 | 122 | 129 | 168 | 249 | 262 | 266 | 379 | 403 | 432 |
| | 1400-120 to 2800-120 cm ² | lbs | 212 | 218 | 223 | 324 | 340 | 425 | 597 | 626 | 635 | 884 | 937 | 1001 |
| | | kg | 96 | 99 | 101 | 147 | 154 | 193 | 271 | 284 | 288 | 401 | 425 | 454 |

- ¹⁾ A = With screwed-in seat and plug · B = With clamped-in seat and plug · C = With piston and cage

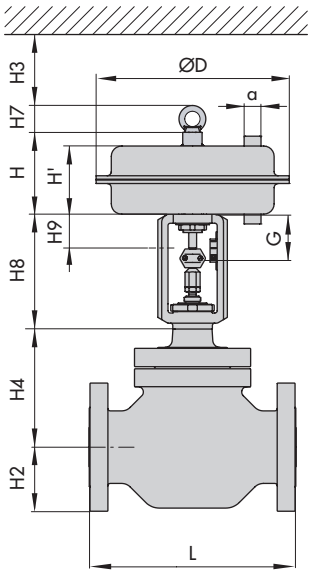
Table 4.2: Types 3271 and 3277 Pneumatic Actuators

| Actuator | cm ² | 175v2 | 350 | 355v2 | 750v2 | 1000 | 1400-60 | 1400-120 | 2800 | 2 x 2800 | |
|---------------------|-------------------|-------|-----|-------|-------|------|---------|----------|--------------------------------------|--|------------|
| Type 3271 (approx.) | Without handwheel | lbs | 14 | 18 | 33 | 80 | 187 | 154 | 386 | 992 | 2094 |
| | | kg | 6 | 8 | 15 | 36 | 85 | 70 | 175 | 450 | 950 |
| | With handwheel | lbs | 23 | 29 | 44 | 91 | 419 | 386 | 661 ¹⁾ /937 ²⁾ | 1268 ¹⁾ /1543 ²⁾ | On request |
| | | kg | 10 | 13 | 20 | 41 | 190 | 175 | 300 ¹⁾ /425 ²⁾ | 575 ¹⁾ /700 ²⁾ | |
| Type 3277 (approx.) | Without handwheel | lbs | 23 | 26 | 42 | 88 | | | | | |
| | | kg | 10 | 12 | 19 | 40 | | | | | |
| | With handwheel | lbs | 31 | 37 | 53 | 98 | | | | | |
| | | kg | 14 | 17 | 24 | 45 | | | | | |

- ¹⁾ Side-mounted handwheel up to 80 mm travel
²⁾ Side-mounted handwheel above 80 mm travel

Dimensional drawings

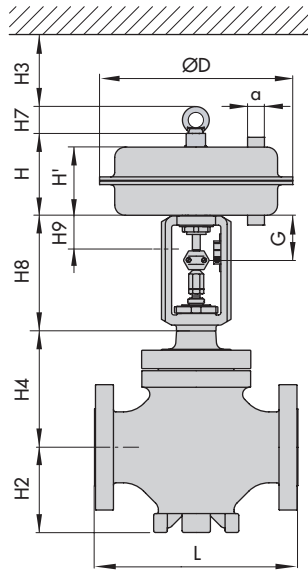
Type 3271 Pneumatic Actuator



Type 3251-E-1

Up to NPS 4 without foot

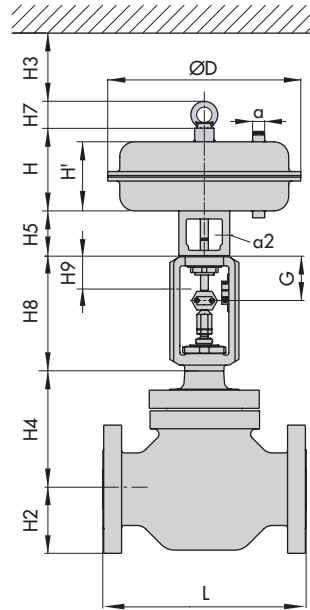
Type 3271 Pneumatic Actuator



Type 3251-E-1

NPS 6 and larger with foot

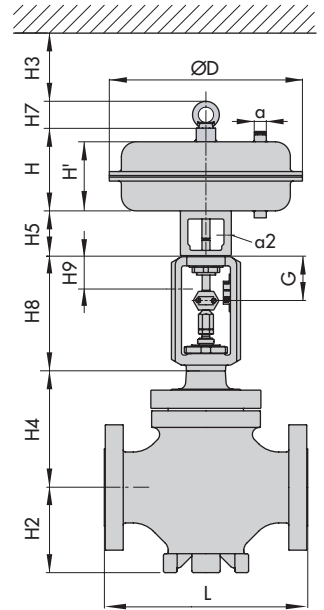
Type 3277 Pneumatic Actuator



Type 3251-E-7

Up to NPS 4 without foot

Type 3277 Pneumatic Actuator



Type 3251-E-7

NPS 6 and larger with foot

Selection and sizing of the valve

1. Calculate C_v coefficient according to IEC 60534-6
2. Select valve size NPS and C_v coefficient.
3. Determine the permissible differential pressure from the Information Sheet ► T 8000-4.
4. Select the valve body material from Table 1 and Table 2 as well as from the pressure-temperature diagrams (see Information Sheet ► T 8000-2).
5. Select accessories from Table 1 and Table 2.

Order specifications:

| | |
|--------------------|--|
| Valve size | NPS |
| Pressure rating | Class |
| Body material | Refer to Table 2 |
| Bonnet | Standard bonnet, insulating section or bellows seal |
| Type of connection | Flanges/welding ends |
| Plug/piston | Standard or balanced Soft seal, metal seal or high-performance metal seal |
| Characteristic | Equal percentage, linear, mod. linear or on/off |
| Actuator | Type 3271 or Type 3277 (see Data Sheets ► T 8310-1, ► T 8310-2 and ► T 8310-3) |
| Fail-safe position | Fail-close or fail-open |
| Process medium | Density in lb/cu.ft or kg/m ³ and temperature in °F (°C) |
| Flow rate | lbs/h or kg/h or cu.ft/min or m ³ /h in standard or operating state |
| Pressure | p_1 and p_2 in psi (bar) (absolute pressure p_{abs}) (with minimum, normal and maximum flow rate) |
| RFID tag | Yes/No |
| Valve accessories | Positioner and/or limit switch |

| | |
|---|------------------|
| Associated Information Sheet | ► T 8000-X |
| Associated Data Sheets for Pneumatic actuators | ► T 8310-1 to -3 |
| Associated Mounting and Operating Instructions | ► EB 8052-E |