

T 8222 EN

Type 3310 Segmented Ball Valve

DIN and ANSI versions

Application

Rotary valve for throttling or on/off service in industrial applications with high flow rates

Valve size DN 25 to 300 · NPS 1 to 12

Pressure rating PN 16 to 40 · Class 150 to 300

Temperatures -46 to +450 °C · -51 to +842 °F

Type 3310 Segmented Ball Valve with

- Single-acting Type 31a-SRP Pneumatic Rotary Actuator
- Double-acting Type 31a-DAP Pneumatic Rotary Actuator
- Single-acting Type 3278 Pneumatic Rotary Actuator
▶ T 8321

Valve body made of

- Cast steel
- Cast stainless steel

Segmented ball valve

- Soft seal
- Metal seal

The control valves can be equipped with various accessories: Positioners, solenoid valves and other accessories according to VDI/VDE 3845 on Type SRP or DAP and Type 3278 Rotary Actuators. Direct attachment of SAMSON valve accessories to Type 3278 Rotary Actuator.

Versions

Standard version for temperatures ranging from -29 to +220 °F/-20 to +428 °C), DN 25 to 300/NPS 1 to 12

Further versions:

- With double packing with or without leak monitoring
- With insulating section for a wider temperature range
- With form-fit flanges
- With pneumatic rotary actuator and additional handwheel
- With handwheel
- With heating jacket
- With gaskets and lubricants in compliance with FDA/EC 1935/NSF H1
- With additional seals for protection of the bearing
- Version for oxygen service (GOX) up to 13.8 bar

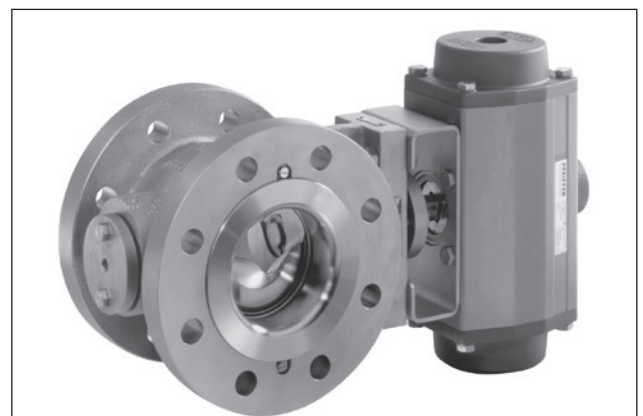


Fig. 1: Type 3310 Segmented Ball Valve with Type 31a Pneumatic Rotary Actuator

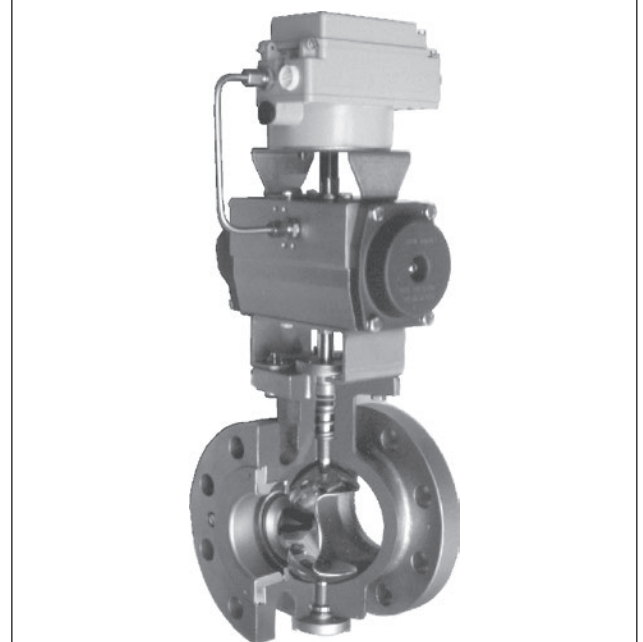


Fig. 2: Cutaway view of Type 3310 Segmented Ball Valve with Type 31a Pneumatic Rotary Actuator and positioner

Principle of operation

In the segmented ball valve, the medium flows into the convex face of the ball. When the valve is closed, the pressure acts on the convex side of the ball. The flow coefficient is determined by the opening angle of the ball.

To reduce the wear on the body on controlling abrasive media, the direction of flow can be reversed.

Fail-safe position

With the Type SRP and Type 3278 Rotary Actuator the control valve has two fail-safe positions which become effective when the pressure acting on the piston or diaphragm is reduced as well as when the supply air fails:

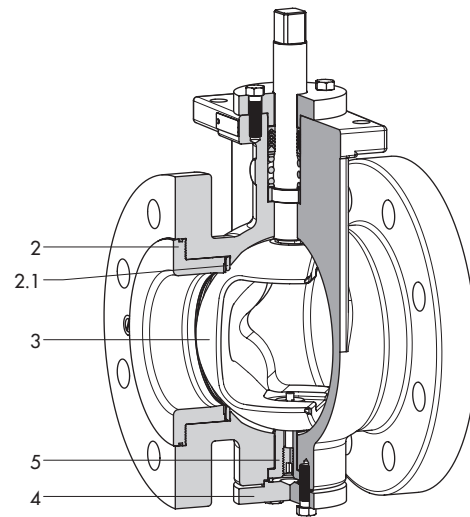
- **Fail-close valve:** The segmented ball valve is closed when the supply air fails.
- **Fail-open valve:** The segmented ball valve is opened when the supply air fails.

The Type DAP Rotary Actuator has no springs. A defined final position is not reached when the supply air fails.

Select characteristic

The design of the segmented ball allows the same valve to be used with two different types of flow characteristic:

- **Equal percentage (standard):** The actuator turns clockwise (right turning) to close the valve, looking from the actuator toward the valve.
- **Linear:** The converted actuator turns counterclockwise (left turning) to close the valve, looking from the actuator toward the valve.



- 2 Retainer
- 2.1 Seat ring
- 3 Segmented ball valve
- 4 Bottom flange
- 5 Counter bearing

Fig. 3: Type 3310 Segmented Ball Valve

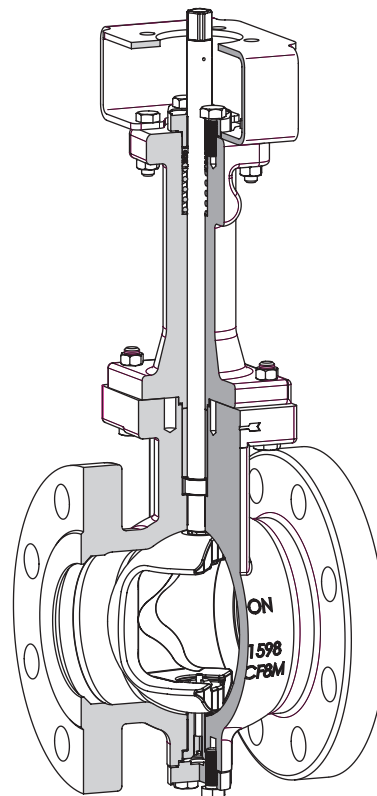


Fig. 4: Insulating section for Type 3310 Segmented Ball Valve

Table 1: Technical data

| Valve size | | DN 25 to 300 | | NPS 1 to 12 | |
|---|---------------------------------|--|----------------|--|----------------|
| Pressure rating | | PN 16 to 40 | | Class 150/300 | |
| Type of connection | Flanges | DIN EN 1092-1 | | ANSI B16.5 | |
| Seat ring | Soft seal | PTFE with reinforced stainless steel (max. 220 °C) or PEEK | | PTFE with reinforced stainless steel (max. 430 °F) or PEEK | |
| | Metal seal | ARCAP AP1C (copper alloy) | | | |
| Characteristic | | Linear or equal percentage | | | |
| Max. opening angle | | 90° | | | |
| Rangeability | | ≥100:1 | | | |
| Face-to-face dimensions | | DIN EN 558-2 Series 36 | | | |
| Temperature range | Standard version | -10 to +220 °C (14 to 752 °F) | | -20 to +428 °F (-29 to +220 °C) | |
| | Version with insulating section | 1.0619 | 1.4408 | A216 WCC | A351 CF8M |
| | | -10 to +400 °C | -46 to +450 °C | -20 to 797 °F | -51 to +842 °F |
| Leakage class according to ANSI/FCI 70-2 | | | | | |
| Soft seal | | VI | | | |
| Metal seal | | IV | | | |

Table 2: Materials for standard version

| Body | 1.0619 | | 1.4408 | | A216 WCC | | A351 CF8M | |
|------------------------------|---|--------------|--|--------------|---|--------------|--|--------------|
| Valve size | DN 25 | DN 40 to 300 | DN 25 | DN 40 to 300 | NPS 1 | NPS 1½ to 12 | NPS 1 | NPS 1½ to 12 |
| Segmented ball ¹⁾ | 1.4404 | 1.4409 | 1.4404 | 1.4409 | 316L | CF3M | 316L | CF3M |
| Shaft | DN 150 and NPS 6: AISI 630 · All other valve sizes: 316L | | | | | | | |
| Plain bearing | Standard version: NORTON® Special version for high temperatures and high pressures: ARCAP AP1C | | | | | | | |
| Packing | V-ring packing: PTFE with carbon · Spring: Stainless steel | | | | | | | |
| Bottom flange | Up to DN 80: 1.4409 DN 100 and larger: 1.0460 | | Up to DN 80: 1.4409 DN 100 and larger: 1.4404 | | Up to NPS 3: 316L NPS 4 and larger: A105 | | Up to NPS 3: A351 CF3M NPS 4 and larger: 316L | |

¹⁾ The segmented ball is chrome plated as standard.

Table 3: Opening angle and associated C_v and K_{VS} coefficients**Table 3.1: C_v coefficients for modified linear characteristic**

| Valve size | | Opening angle | | | | | | | | | | |
|------------|-----|---------------|-----|------|-----|------|------|------|------|------|------|------|
| NPS | DN | 5° | 10° | 20° | 30° | 40° | 50° | 55° | 60° | 70° | 80° | 90° |
| 1 | 25 | 0.35 | 1 | 3.4 | 7 | 11.5 | 17.3 | 20 | 24.5 | 32.3 | 38 | 40 |
| 1½ | 40 | 1 | 3 | 10 | 21 | 35 | 52 | 60 | 74 | 97 | 114 | 120 |
| 2 | 50 | 1.4 | 4 | 13.6 | 28 | 46 | 69 | 80 | 98 | 129 | 152 | 160 |
| 3 | 80 | 3.6 | 10 | 34 | 70 | 115 | 173 | 200 | 245 | 323 | 381 | 400 |
| 4 | 100 | 6.3 | 18 | 60 | 123 | 201 | 302 | 350 | 429 | 565 | 666 | 700 |
| 6 | 150 | 13 | 35 | 119 | 245 | 402 | 605 | 700 | 858 | 1130 | 1333 | 1400 |
| 8 | 200 | 18 | 50 | 170 | 350 | 574 | 864 | 1000 | 1226 | 1614 | 1904 | 2000 |
| 10 | 250 | 28 | 78 | 264 | 543 | 890 | 1339 | 1550 | 1900 | 2502 | 2951 | 3100 |
| 12 | 300 | 28 | 78 | 264 | 543 | 890 | 1339 | 1550 | 1900 | 2502 | 2951 | 3100 |

Table 3.2: K_{VS} coefficients for modified linear characteristic

| Valve size | | Opening angle | | | | | | | | | | |
|------------|-----|---------------|------|-------|-----|-----|------|------|------|------|------|------|
| NPS | DN | 5° | 10° | 20° | 30° | 40° | 50° | 55° | 60° | 70° | 80° | 90° |
| 1 | 25 | 0.3 | 0.85 | 3 | 6 | 10 | 14.7 | 17 | 20.8 | 27.4 | 32.3 | 34 |
| 1½ | 40 | 0.85 | 2.5 | 8.5 | 18 | 30 | 44 | 51 | 63 | 82.4 | 97 | 102 |
| 2 | 50 | 1.2 | 3.4 | 11.68 | 24 | 40 | 59 | 68 | 84 | 110 | 130 | 140 |
| 3 | 80 | 3 | 8.5 | 29 | 60 | 98 | 148 | 170 | 210 | 276 | 325 | 340 |
| 4 | 100 | 5.4 | 15 | 51 | 105 | 172 | 260 | 298 | 367 | 482 | 570 | 600 |
| 6 | 150 | 11 | 30 | 102 | 210 | 344 | 517 | 595 | 733 | 965 | 1140 | 1200 |
| 8 | 200 | 15.4 | 43 | 145 | 300 | 490 | 738 | 850 | 1048 | 1380 | 1630 | 1700 |
| 10 | 250 | 24 | 66 | 225 | 464 | 760 | 1145 | 1317 | 1624 | 2140 | 2520 | 2650 |
| 12 | 300 | 24 | 66 | 225 | 464 | 760 | 1145 | 1317 | 1624 | 2140 | 2520 | 2650 |

Table 3.3: C_V coefficients for modified equal percentage characteristic (standard)

| Valve size | | Opening angle | | | | | | | | | | |
|------------|-----|---------------|------|-----|-----|-----|------|------|------|------|------|------|
| NPS | DN | 5° | 10° | 20° | 30° | 40° | 50° | 55° | 60° | 70° | 80° | 90° |
| 1 | 25 | 0.08 | 0.16 | 1.3 | 3.3 | 6.3 | 10.7 | 14 | 16.3 | 23 | 32 | 40 |
| 1½ | 40 | 0.25 | 0.5 | 4 | 10 | 19 | 32 | 42 | 49 | 69 | 95 | 120 |
| 2 | 50 | 0.3 | 0.6 | 5 | 13 | 25 | 42 | 56 | 65 | 92 | 126 | 160 |
| 3 | 80 | 0.8 | 1.6 | 12 | 32 | 62 | 106 | 140 | 162 | 231 | 316 | 400 |
| 4 | 100 | 1.4 | 2.8 | 22 | 56 | 109 | 186 | 245 | 284 | 405 | 553 | 700 |
| 6 | 150 | 2.8 | 5.6 | 43 | 112 | 218 | 371 | 490 | 567 | 809 | 1106 | 1400 |
| 8 | 200 | 4.0 | 8 | 62 | 160 | 312 | 530 | 700 | 810 | 1156 | 1580 | 2000 |
| 10 | 250 | 6.2 | 12 | 96 | 248 | 484 | 822 | 1085 | 1256 | 1792 | 2449 | 3100 |
| 12 | 300 | 6.2 | 12 | 96 | 248 | 484 | 822 | 1085 | 1256 | 1792 | 2449 | 3100 |

Table 3.4: K_{VS} coefficients for modified equal percentage characteristic (standard)

| Valve size | | Opening angle | | | | | | | | | | |
|------------|-----|---------------|------|-----|-----|-----|-----|-----|------|------|------|------|
| NPS | DN | 5° | 10° | 20° | 30° | 40° | 50° | 55° | 60° | 70° | 80° | 90° |
| 1 | 25 | 0.07 | 0.13 | 1.1 | 2.8 | 5.3 | 9 | 12 | 14 | 20 | 27 | 34 |
| 1½ | 40 | 0.21 | 0.4 | 3.4 | 8.5 | 16 | 27 | 36 | 42 | 59 | 81 | 102 |
| 2 | 50 | 0.25 | 0.5 | 4 | 11 | 21 | 36 | 48 | 56 | 79 | 108 | 140 |
| 3 | 80 | 0.7 | 1.4 | 10 | 27 | 53 | 91 | 120 | 138 | 197 | 270 | 340 |
| 4 | 100 | 1.2 | 2.4 | 19 | 48 | 93 | 159 | 208 | 243 | 346 | 473 | 600 |
| 6 | 150 | 2.4 | 4.8 | 37 | 96 | 186 | 317 | 416 | 485 | 691 | 945 | 1200 |
| 8 | 200 | 3.4 | 6.8 | 53 | 137 | 267 | 453 | 688 | 692 | 990 | 1350 | 1700 |
| 10 | 250 | 5.3 | 10 | 82 | 212 | 414 | 702 | 922 | 1074 | 1531 | 2093 | 2650 |
| 12 | 300 | 5.3 | 10 | 82 | 212 | 414 | 702 | 922 | 1074 | 1531 | 2093 | 2650 |

Table 4: Terms for control valve sizing and noise level calculation**Table 4.1:** Modified linear characteristic

| | Opening angle | | | | | | | | | | |
|-------|---------------|------|------|------|------|------|-------------------|------|------|------|------|
| | 5° | 10° | 20° | 30° | 40° | 50° | 55° ¹⁾ | 60° | 70° | 80° | 90° |
| F_L | 0.95 | 0.95 | 0.95 | 0.94 | 0.87 | 0.81 | 0.77 | 0.73 | 0.65 | 0.59 | 0.57 |
| X_T | 0.78 | 0.78 | 0.78 | 0.76 | 0.65 | 0.56 | 0.51 | 0.46 | 0.36 | 0.30 | 0.27 |
| C | 0.39 | 0.35 | 0.28 | 0.23 | 0.2 | 0.17 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 |

Table 4.2: Modified equal percentage characteristic

| | Opening angle | | | | | | | | | | |
|-------|---------------|------|------|------|------|------|-------------------|------|------|------|------|
| | 5° | 10° | 20° | 30° | 40° | 50° | 55° ¹⁾ | 60° | 70° | 80° | 90° |
| F_L | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.90 | 0.86 | 0.82 | 0.75 | 0.66 | 0.57 |
| X_T | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.69 | 0.62 | 0.58 | 0.49 | 0.38 | 0.27 |
| C | 0.44 | 0.39 | 0.33 | 0.29 | 0.24 | 0.21 | 0.19 | 0.18 | 0.15 | 0.12 | 0.09 |

Table 5: Permissible differential pressures for Type 3310 Segmented Ball Valve · All pressures stated in bar

Table 5.1: Permissible differential pressures for valve CLOSED · For both fail-safe positions · With Type 31a-SRP Rotary Actuator

| Valve size | | C _v coefficient | Shaft Ø in mm | Type SRP ... Actuator | No. of springs | Required supply pressure | Max. supply pressure at | | | Δp with PTFE or metal seal | |
|------------|-----|----------------------------|---------------|-----------------------|----------------|--------------------------|-------------------------|-----------------|-------------------------------|---------------------------------|--------------------------------|
| NPS | DN | | | | | | 20 °C (71 °F) | 220 °C (428 °F) | 450 °C ¹⁾ (842 °F) | With standard direction of flow | With reverse direction of flow |
| 1 | 25 | 40 | 16 | 60 | 2/3 | 2.5 | 6.9 | 5.5 | 4 | 15 | 10 |
| | | | | | 4 | 4 | 7.5 | 6.1 | 4.5 | 20 | 20 |
| | | | | | 5/6 | 5.5 | 8 | 8 | 8 | 17 | 12 |
| 1½ | 40 | 120 | 16 | 100 | 2/3 | 2.5 | 4.8 | 3.9 | 2.9 | 20 | 17 |
| | | | | | 4 | 4 | 7.5 | 6.1 | 4.5 | 20 | 19 |
| | | | | | 5/6 | 5.5 | 8 | 6.7 | – | 20 | 20 |
| 2 | 50 | 160 | 16 | 150 | 2/3 | 2.5 | 5.6 | 5 | 4.4 | 20 | 20 |
| | | | | | 4 | 4 | 8 | 7.6 | 6.6 | 20 | 20 |
| | | | | | 5/6 | 5.5 | 8 | 8 | 8 | 20 | 20 |
| 3 | 80 | 400 | 16 | 220 | 2/3 | 2.5 | 3.8 | 3.5 | 3.1 | 20 | 20 |
| | | | | | 4 | 4 | 6.2 | 5.6 | 5 | 20 | 20 |
| | | | | | 5/6 | 5.5 | 8 | 8 | 7.2 | 20 | 18 |
| 4 | 100 | 700 | 25 | 450 | 2/3 | 2.5 | 6.6 | 6 | 5.2 | 18 | 15 |
| | | | | | 4 | 4 | 8 | 8 | 8 | 18 | 16 |
| | | | | | 5/6 | 5.5 | 8 | 8 | 8 | 20 | 19 |
| 6 | 150 | 1400 | 25 | 600 | 3 | 3 | 5.5 | 5 | 4.4 | 11 | 8 |
| | | | | | 4 | 4 | 5.9 | 5.4 | 4.8 | 20 | 20 |
| | | | | | 5/6 | 5.5 | 7.8 | 7.1 | 6.3 | 20 | 20 |
| | | | | | 5/6 | 5.5 | 8 | 8 | 8 | 6 | 3 |
| 8 | 200 | 2000 | 36 | 1200 | 2/3 | 2.5 | 5 | 4.5 | 3.9 | 9 | 6 |
| | | | | | 4 | 4 | 5.6 | 5.1 | 4.5 | 20 | 20 |
| | | | | | 5/6 | 5.5 | 7.8 | 7.1 | 6.3 | 20 | 20 |
| 10 | 250 | 3100 | 36 | 1200 | 4 | 4 | 5.6 | 5.1 | 4.5 | 9 | 6 |
| | | | | | 5/6 | 5.5 | 6.2 | 5.7 | – | 19 | 16 |
| | | | | | 5/6 | 5.5 | 7.8 | 7.1 | 6.3 | 7 | 5 |
| 12 | 300 | 3100 | 36 | 1200 | 4 | 4 | 5.6 | 5.1 | 4.5 | 9 | 6 |
| | | | | | 5/6 | 5.5 | 6.2 | 5.7 | – | 19 | 16 |
| | | | | | 5/6 | 5.5 | 7.8 | 7.1 | 6.3 | 7 | 5 |

¹⁾ Version with insulating section

Table 5.2: Permissible differential pressures for valve CLOSED · For both fail-safe positions · With Type 3278 Rotary Actuator

| Valve size | | C _v coefficient | Shaft Ø in mm | Actuator area in cm ² | Bench range ¹⁾ | Required supply pressure | Max. supply pressure at | | Δp with PTFE or metal seal | |
|------------|-----|----------------------------|---------------|----------------------------------|---------------------------|--------------------------|-------------------------|-----------------|---------------------------------|--------------------------------|
| NPS | DN | | | | | | 20 °C (71 °F) | 220 °C (428 °F) | With standard direction of flow | With reverse direction of flow |
| 1 | 25 | 40 | 16 | 160 | 0.5...1.0 | 1.5 | 2.5 | 2 | 17 | 12 |
| | | | | | 0.8...1.6 | 2.4 | 3 | 2.6 | 20 | 20 |
| 1½ | 40 | 120 | 16 | 160 | 0.5...1.0 | 1.5 | 2.5 | 2 | 10 | – |
| | | | | | 0.8...1.6 | 2.4 | 3 | 2.6 | 20 | 20 |
| 2 | 50 | 160 | 16 | 160 | 0.8...1.6 | 2.5 | 4.5 | 4.1 | 20 | 20 |
| 3 | 80 | 400 | 16 | 160 | 1.2...2.4 | 3.7 | 5.2 | 4.7 | 7 | – |
| | | | | | 1.7...3.4 | 5.1 | 5.8 | 5.4 | 20 | 20 |
| 4 | 100 | 700 | 25 | 320 | 0.8...1.6 | 2.4 | 4.8 | 4.4 | 9 | 4 |
| | | | | | 1.2...2.4 | 3.6 | 5.4 | 5 | 20 | 20 |
| 6 | 150 | 1400 | 25 | 320 | 1.7...3.4 | 5.1 | 6 | 5.6 | 12 | 10 |

¹⁾ Only applies to standard direction of flow

Table 6: Permissible shaft and opening torques

Table 6.1: Shaft with square drive (e.g. Type 31a-SRP/DAP Actuator)

| Valve size | | Perm. shaft torque [Nm] at | | Opening torque [Nm] for PTFE or metal seal with | | | | | | | |
|------------|-----|----------------------------|-----------------|---|--------|--------|--------|---------------------------------|--------|--------|--------|
| NPS | DN | 20 °C (71 °F) | 220 °C (428 °F) | Standard direction of flow at Δp | | | | Reverse direction of flow at Δp | | | |
| | | | | 5 bar | 10 bar | 15 bar | 20 bar | 5 bar | 10 bar | 15 bar | 20 bar |
| 1 | 25 | 70 | 54 | 9 | 9 | 11 | 13 | 10 | 11 | 13 | 15 |
| 1½ | 40 | 70 | 54 | 12 | 12 | 14 | 16 | 13 | 14 | 16 | 18 |
| 2 | 50 | 125 | 110 | 14 | 14 | 16 | 18 | 15 | 16 | 18 | 20 |
| 3 | 80 | 125 | 110 | 29 | 31 | 33 | 35 | 32 | 34 | 36 | 38 |
| 4 | 100 | 500 | 440 | 60 | 65 | 76 | 87 | 65 | 70 | 81 | 92 |
| 6 | 150 | 500 | 440 | 115 | 125 | 145 | 165 | 125 | 135 | 155 | 175 |
| 8 | 200 | 860 | 750 | 190 | 210 | 255 | 300 | 210 | 230 | 275 | 320 |
| 10 | 250 | 860 | 750 | 300 | 340 | 410 | 480 | 330 | 370 | 440 | 510 |
| 12 | 300 | 860 | 750 | 300 | 340 | 410 | 480 | 330 | 370 | 440 | 510 |

Table 6.2: Shaft with key drive end (e.g. Type 3278 Actuator)

| Valve size | | Perm. shaft torque [Nm] at | | Opening torque [Nm] for PTFE or metal seal with | | | | | | | |
|------------|-----|----------------------------|-----------------|---|--------|--------|--------|---------------------------------|--------|--------|--------|
| NPS | DN | 20 °C (71 °F) | 220 °C (428 °F) | Standard direction of flow at Δp | | | | Reverse direction of flow at Δp | | | |
| | | | | 5 bar | 10 bar | 15 bar | 20 bar | 5 bar | 10 bar | 15 bar | 20 bar |
| 1 | 25 | 70 | 54 | 9 | 9 | 11 | 13 | 10 | 11 | 13 | 15 |
| 1½ | 40 | 70 | 54 | 12 | 12 | 14 | 16 | 13 | 14 | 16 | 18 |
| 2 | 50 | 125 | 110 | 14 | 14 | 16 | 18 | 15 | 16 | 18 | 20 |
| 3 | 80 | 125 | 110 | 29 | 31 | 33 | 35 | 32 | 34 | 36 | 38 |
| 4 | 100 | 500 | 440 | 60 | 65 | 76 | 87 | 65 | 70 | 81 | 92 |
| 6 | 150 | 500 | 440 | 115 | 125 | 145 | 165 | 125 | 135 | 155 | 175 |

Table 7: Dimensions in mm and weights in kg

| Valve | NPS | 1 | 1½ | 2 | 3 | 4 | 6 | 8 | 10 | 12 |
|--|-----|---------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | DN | 25 | 40 | 50 | 80 | 100 | 150 | 200 | 250 | 300 |
| L - Face-to-face dimension according to ISA S75.04 | mm | 102 | 114 | 124 | 165 | 194 | 229 | 243 | 297 | 338 |
| d - Shaft Ø | mm | 16 | 16 | 16 | 16 | 25 | 25 | 36 | 36 | 36 |
| A | mm | 107 | 117 | 126 | 145 | 170 | 206 | 254 | 281 | 281 |
| B | mm | 72 | 82 | 100 | 120 | 140 | 175 | 205 | 230 | 230 |
| F - Optional insulating section | | 170 | | | | 255 | | | | |
| Flange connecting yoke | | See Actuators | | | | | | | | |
| SW (standard shaft) | mm | 12 | 12 | 12 | 12 | 19 | 19 | 27 | 27 | 27 |
| Shaft with key drive for Type 3278 Actuator | mm | 16 | 16 | 16 | 16 | 25 | 25 | - | - | - |
| Weight | kg | 5 | 7 | 16 | 28 | 42 | 70 | 110 | 155 | 180 |

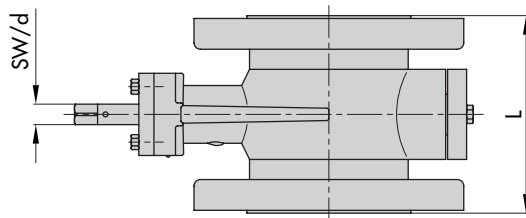
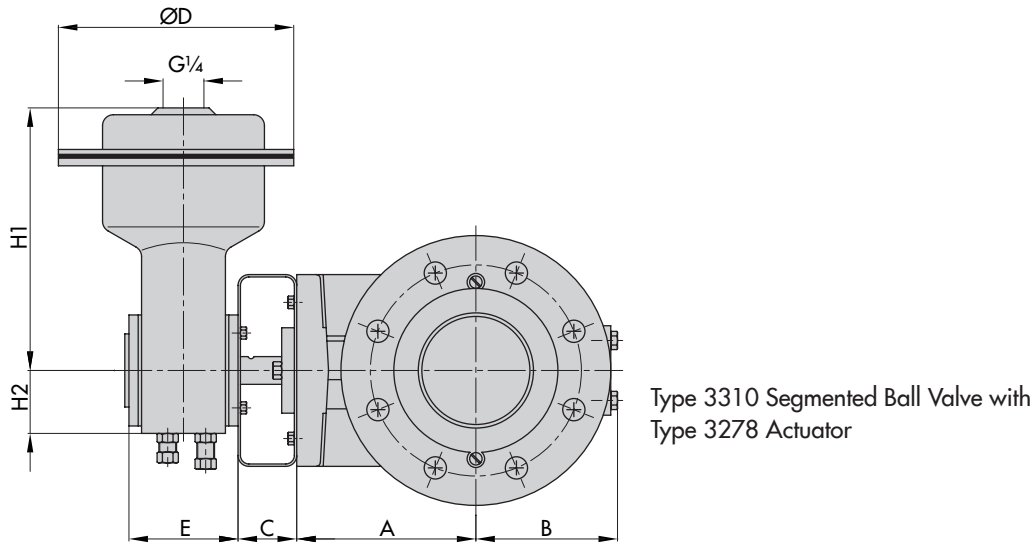
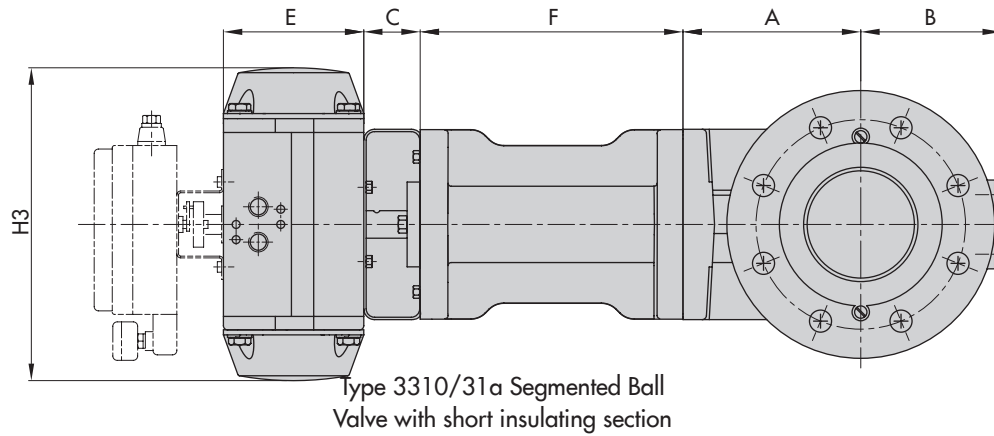
| Type 31a-SRP/DAP Rotary Actuator ¹⁾ | | 30 | 60 | 100 | 150 | 220 | 300 | 450 | 600 | 900 | 1200 |
|--|----------|-----------------|-----|----------------|-----------------|-----------------|------------------|-------------------------|-----------------|------|------|
| Mounted on valve | | NPS 1½ DN 40 | | | | | | | | | |
| | | NPS 2 DN 50 | | | NPS 4 DN 100 | | | NPS 10/12 DN 250/300 | | | |
| | | NPS 1 DN 25 | | NPS 3 DN 80 | | NPS 6 DN 150 | | | NPS 8 DN 200 | | |
| | C | mm | 50 | 50 | 50 | 50 | 50 ²⁾ | 55 | 55 | 55 | 80 |
| H3 | mm | 159 | 211 | 248 | 269 | 315 | 345 | 409 | 438 | 487 | 543 |
| E | mm | 85 | 102 | 115 | 127 | 145 | 157 | 177 | 196 | 221 | 245 |
| Connecting flange | DIN 3337 | F05 | F05 | F07 | F07 | F10 | F10 | F12 | F12 | F14 | F14 |
| AF | mm | 14 | 14 | 17 | 17 | 22 | 22 | 27 | 27 | 36 | 36 |
| Weight [kg] | Type SRP | 1.7 | 3.2 | 4.4 | 6.6 | 9.5 | 12.6 | 18.1 | 24 | 31.6 | 45.1 |
| | Type DAP | 1.5 | 2.7 | 3.9 | 5.4 | 8.4 | 10.2 | 14.5 | 19.8 | 25 | 35.5 |

| Type 3278 Rotary Actuator | | 160 cm ² | | | 320 cm ² | | |
|---------------------------|----------|---------------------|--|--|---------------------|----|--|
| E | mm | 118 | | | 162 | | |
| C | mm | 50 | | | 55 ²⁾ | 80 | |
| H1 | mm | 260 | | | 421 | | |
| H2 | mm | 72 | | | 95 | | |
| D | mm | 225 | | | 295 | | |
| Connecting flange | ISO 5211 | F07 | | | F12 | | |
| Weight | kg | 16 | | | 50 | | |

¹⁾ Single-acting Type 31a-SRP/SC (right turning) and Type 31a-SRP/SO (left turning) Actuators.
Double-acting Type 31a-DAP/DR (right turning) and Type 31a-DAP/DC (left turning) Actuators.

²⁾ C = 55 mm with valve in NPS 4

Dimensional drawings



Order numbers

| | | | |
|-------------------|----------------------------|--------------------|---|
| Valve size | DN .../NPS ... | Rotary actuator | Type 31a-SRP, Type 31a-DAP or Type 3278 |
| Pressure rating | PN .../Class ... | Fail-safe position | Fail-close or fail-open |
| Body material | Refer to Tabelle 2 | Supply air | ... bar |
| Gasket | Metal or soft seal | Operating range | Number of springs or bench range |
| Characteristic | Equal percentage or linear | Valve accessories | Positioner and/or limit switch |
| Direction of flow | Standard or reverse | | |