

## → Series 420



### ■ MATERIAL



### ■ SPECIFICATION



1/4" – 3/8"



– 40°C to + 260°C  
depending on version



0,5 – 50 bar  
depending on version

### ■ SUITABLE FOR

|                        |                         |  |
|------------------------|-------------------------|--|
| Liquids                | neutral and non-neutral |  |
| Air, gases and vapours | neutral and non-neutral |  |
| Steam                  |                         |  |

### ■ EXAMPLES OF USE

For the protection of:

- pressure tanks and -systems for neutral / non-neutral vapours, gases and liquids
- steam boilers and steam plants

Please observe plant-specific regulations and use of appropriate valve version and sealing material.

- chemical plants, biogas plants
- process technology
- desalination plants
- process equipment construction and medical technology
- shipbuilding industry and marine equipment
- secondary areas in the food-, beverage-, pharmaceutical- and cosmetics-industries
- offshore-applications
- general applications with screwed pipe connections
- Hydrogen applications

**Safety valves are set and sealed at the factory.**

### ■ APPROVALS

|                                        |                                      |
|----------------------------------------|--------------------------------------|
| TÜV-Type test approval 2069            | D/G, F, F/K/S <sup>1</sup>           |
| EU type examination                    | S/G, L, F/K/S <sup>1</sup>           |
| TSG ZF001-2006                         | G, F (L)                             |
| TR ZU 032/2013 - TR ZU 010/2011        | D/G (S/G), F (L), F/K/S <sup>1</sup> |
| <b>Requirements</b>                    |                                      |
| AD 2000 Data sheet A2                  | DIN EN ISO 4126-1                    |
| TRD 421                                | DGR 2014/68/EU                       |
| TRB 801 No. 22 and No. 23 <sup>1</sup> |                                      |
| <b>Classification society</b>          |                                      |
| DNV                                    | DNV                                  |
| Lloyd's Register EMEA                  | LR EMEA                              |
| American Bureau of Shipping            | ABS                                  |
| Bureau Veritas                         | BV                                   |
| Registro Italiano Navale               | RINA                                 |

### ■ MATERIALS

| Component                   | Material        | DIN EN | ASME   |
|-----------------------------|-----------------|--------|--------|
| Inlet body                  | Stainless steel | 1.4404 | 316 L  |
| Outlet body                 | Stainless steel | 1.4404 | 316 L  |
| Internal parts              | Stainless steel | 1.4404 | 316 L  |
| Spring                      | Stainless steel | 1.4310 | 302    |
| Metallic bellows (optional) | Stainless steel | 1.4571 | 316 Ti |
| PTFE-bellows (optional)     | PTFE            | PTFE   | PTFE   |

<sup>1</sup>only for versions with bellows

|    |                                    |                                                                                                                                                                                                                                                                                                                                                                                           |
|----|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| t  | gastight version of spring housing | for neutral and non-neutral media without counter pressure.<br>The environment is protected from being affected by the medium.<br>0,5 to 1,5 bar gastight version (without bellows).                                                                                                                                                                                                      |
| tb | gastight version with bellows      | for neutral and non-neutral media without counter pressure. Spring and moving parts as the environment are protected from being affected by the medium.<br>Version of bellows depending on set pressure:<br><b>DN8:</b><br>1,6 to 12 bar PTFE bellows;<br>12,1 to 50 bar stainless steel bellows<br><b>DN10:</b><br>1,6 to 12 bar PTFE bellows;<br>12,1 to 50 bar stainless steel bellows |

■ MEDIUM

|    |                    |                                                                                                      |
|----|--------------------|------------------------------------------------------------------------------------------------------|
| GF | gaseous and liquid | Air, vapours, gases, liquids and - depending on seal - also for steam<br>Only for steam boilers <10l |
|----|--------------------|------------------------------------------------------------------------------------------------------|

■ TYPE OF LIFTING MECHANISM

|   |                        |
|---|------------------------|
| L | Lifting lever          |
| 0 | without lifting device |

■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

| Nominal diameter DN |           | 8 / 10   |           |          |           |
|---------------------|-----------|----------|-----------|----------|-----------|
| Inlet               |           | 1/4" (8) | 3/8" (10) | KV (8mm) | KV (10mm) |
| Outlet              | 3/8" (10) | ■        | ■         | ■        | ■         |
|                     | KV (12mm) | ■        | ■         | ■        | ■         |

■ TYPE OF CONNECTION INLET / OUTLET THREADED CONNECTIONS

|               |          |                                                       |                                     |
|---------------|----------|-------------------------------------------------------|-------------------------------------|
| m / f         | Standard | Male thread BSP-P / Female thread BSP-P               | DIN EN ISO 228-1 / DIN EN ISO 228-1 |
| NPT-m / NPT-f |          | Male thread NPT / Female thread NPT                   | ANSI B 1.20.1                       |
| KV / f        |          | Screw compression fitting / Female thread BSP-P       | EN ISO 8434-1 / DIN EN ISO 228-1    |
| KV / KV       |          | Screw compression fitting / Screw compression fitting | EN ISO 8434-1 / EN ISO 8434-1       |

Other connection types possible on request

■ SEALS

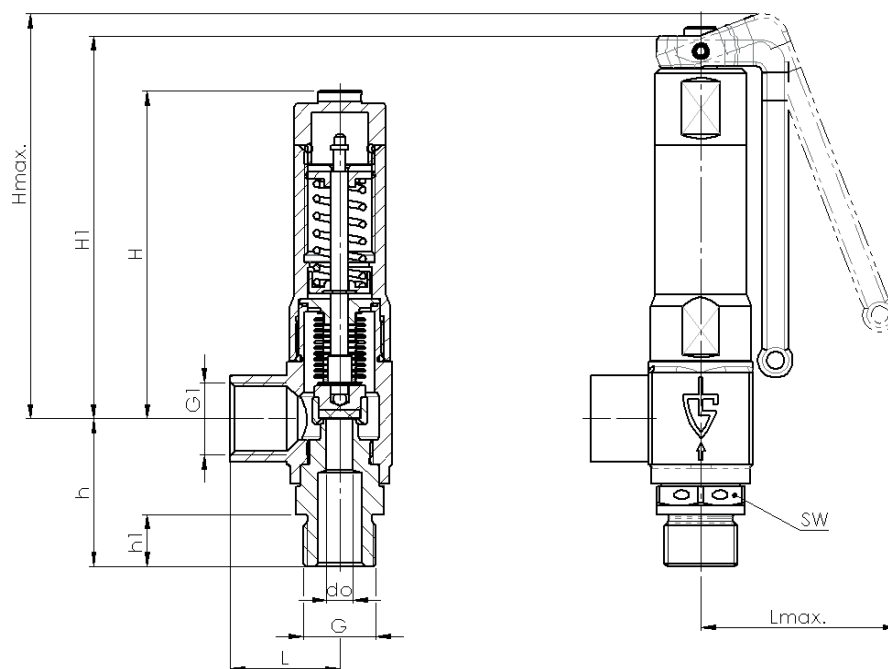
|                   |                          |                                        |                 |
|-------------------|--------------------------|----------------------------------------|-----------------|
| EPDM              | Ethylene propylene diene | Elastomere moulded seal (0,5 – 30 bar) | –40°C to +170°C |
| FKM               | Fluorcarbon              | Elastomere moulded seal (0,5 – 30 bar) | –20°C to +200°C |
| FFKM              | Perfluorinated rubber    | Elastomere moulded seal (0,5 – 20 bar) | –10°C to +260°C |
| PTFE <sup>1</sup> | Polytetrafluoroethylene  | Flat seal (0,5 – 50 bar)               | –40°C to +225°C |

<sup>1</sup> With PTFE seat seals, the secondary seals are made of FKM as standard.

## ■ NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

| Series 420: Connection, installation dimensions, ranges of adjustment |      |           |             |  |
|-----------------------------------------------------------------------|------|-----------|-------------|--|
| Nominal diameter                                                      | DN   | 8         | 10          |  |
| Connection DIN EN ISO 228                                             | G    | 1/4" (8)  | 3/8" (10)   |  |
| Outlet DIN EN ISO 228                                                 | G1   | 3/8" (10) | 3/8" (10)   |  |
| Installation dimensions<br>in mm                                      | L    | 25        | 25          |  |
|                                                                       | Lmax | 45        | 45          |  |
|                                                                       | H    | 75        | 75          |  |
|                                                                       | H1   | 87        | 87          |  |
|                                                                       | Hmax | 93        | 93          |  |
|                                                                       | h    | 34        | 34          |  |
|                                                                       | h1   | 12        | 12          |  |
|                                                                       | SW   | 20        | 20          |  |
| Weight                                                                | kg   | 0,3 / 0,4 | 0,25 / 0,35 |  |
|                                                                       | bar  | 0,5-50    | 0,5-50      |  |

## ■ MAIN DIMENSIONS, INSTALLATION DIMENSIONS



| Series | Valve version | Medium | Lifting device | Nominal diameter DN | Connection type |        | Connection size |        | Seal | Options | Set pressure | Quantity |
|--------|---------------|--------|----------------|---------------------|-----------------|--------|-----------------|--------|------|---------|--------------|----------|
|        |               |        |                |                     | Inlet           | Outlet | Inlet           | Outlet |      |         |              |          |
| 420    | tb            | GF     | L              | 8                   | m               | f      | 8               | 10     | FFKM |         | 5,5          | 2        |
| 420    | t             | GF     | O              | 10                  | SV              | f      | 10mm            | 10     | EPDM |         | 1,0          | 1        |
| 420    |               | GF     |                |                     |                 |        |                 |        |      |         |              |          |
| 420    |               | GF     |                |                     |                 |        |                 |        |      |         |              |          |

■ PROPERTIES

|     |                                                                                                                              |                          |  |                          |
|-----|------------------------------------------------------------------------------------------------------------------------------|--------------------------|--|--------------------------|
| G0X | Especially for gaseous O2 applications by employment of specific materials including oil- and grease free production process | <input type="checkbox"/> |  | <input type="checkbox"/> |
| P01 | Oil- and grease-free production                                                                                              | <input type="checkbox"/> |  | <input type="checkbox"/> |
|     |                                                                                                                              | <input type="checkbox"/> |  | <input type="checkbox"/> |

■ CERTIFICATES / APPROVALS

|     |                                                                                                                            |                          |     |                                                                                                                                   |                          |
|-----|----------------------------------------------------------------------------------------------------------------------------|--------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| C01 | Factory certificate acc. DIN EN 10204 2.2 (WKZ 2.2)                                                                        | <input type="checkbox"/> | C06 | ATEX evaluation acc. to 2014/34/EU                                                                                                | <input type="checkbox"/> |
| C02 | Test certificate acc. DIN EN 10204 3.1 (WPZ 3.1)                                                                           | <input type="checkbox"/> | C07 | SIL evaluation relating to IEC 61508-2                                                                                            | <input type="checkbox"/> |
| C03 | Material test certificate acc. DIN EN 10204 3.1 (MPZ 3.1) (pressure retaining part)                                        | <input type="checkbox"/> | C09 | Seat tightness test with helium, leak detection method under vacuum incl. Factory Inspection Certificate 3.1 acc. to DIN EN 10204 | <input type="checkbox"/> |
| C04 | TÜV/DEKRA individual inspection acc. EN 10204 3.2 (TÜV/DEKRA-APZ)                                                          | <input type="checkbox"/> | C10 | Certificate of oil- and grease free production                                                                                    | <input type="checkbox"/> |
| C05 | Sealing material<br>Manufacturer certification (FDA, USP 3, 3-A,...),<br>Please indicate description of certificate: _____ | <input type="checkbox"/> | C11 | Certification of the production process especially for gaseous oxygen applications by employment of specific materials            | <input type="checkbox"/> |

■ ADMISSIONS / ACCREDITATIONS

|     |                                                                                          |                          |     |                                                                                  |                          |
|-----|------------------------------------------------------------------------------------------|--------------------------|-----|----------------------------------------------------------------------------------|--------------------------|
| AA1 | EC Type examination acc. to Directive 2014/68/EU                                         | <input type="checkbox"/> | AK1 | Det Norske Veritas (DNV) type approval                                           | <input type="checkbox"/> |
| AA2 | TÜV component test acc. to VdTÜV specification sheet SV 100                              | <input type="checkbox"/> | AK2 | Lloyd's Register (LR) type approval                                              | <input type="checkbox"/> |
| AA4 | EAC - certificate/declaration with passport for the valve and laser marking of the valve | <input type="checkbox"/> | AK3 | American Bureau of Shipping (ABS) type approval                                  | <input type="checkbox"/> |
|     |                                                                                          | <input type="checkbox"/> | AK4 | Bureau Veritas (BV) type approval                                                | <input type="checkbox"/> |
|     |                                                                                          | <input type="checkbox"/> | AK6 | Registro Italiano Navale (RINA) type approval                                    | <input type="checkbox"/> |
|     |                                                                                          | <input type="checkbox"/> | AL  | Individual inspection by notified body inspector – (body to be indicated): _____ | <input type="checkbox"/> |

■ ENQUIRY

Copy and send to: [order@goetze.de](mailto:order@goetze.de).

| Series 420: Blowing-off rates at 10% above set pressure |       |     |     |      |      |     |      |
|---------------------------------------------------------|-------|-----|-----|------|------|-----|------|
| Nominal diameter DN                                     |       | DN8 |     |      | DN10 |     |      |
| Set pressure bar                                        |       | I   | II  | III  | I    | II  | III  |
| Air I<br>Nm³/h                                          | 0,50  | 10  | 8   | 0,39 | 15   | 12  | 0,46 |
|                                                         | 1,00  | 16  | 13  | 0,53 | 23   | 18  | 0,62 |
|                                                         | 1,50  | 21  | 17  | 0,65 | 30   | 23  | 0,76 |
|                                                         | 2,00  | 28  | 22  | 0,75 | 38   | 30  | 0,88 |
| Steam II<br>kg/h                                        | 2,50  | 32  | 25  | 0,84 | 45   | 35  | 0,98 |
|                                                         | 3,00  | 37  | 29  | 0,92 | 52   | 41  | 1,07 |
|                                                         | 3,50  | 42  | 33  | 0,99 | 59   | 46  | 1,16 |
|                                                         | 4,00  | 47  | 36  | 1,06 | 65   | 51  | 1,24 |
| Water III<br>m³/h                                       | 4,50  | 52  | 40  | 1,12 | 72   | 56  | 1,31 |
|                                                         | 5,00  | 56  | 43  | 1,18 | 79   | 61  | 1,38 |
|                                                         | 5,50  | 61  | 47  | 1,24 | 85   | 66  | 1,45 |
|                                                         | 6,00  | 66  | 51  | 1,29 | 92   | 71  | 1,52 |
|                                                         | 6,50  | 71  | 54  | 1,35 | 99   | 76  | 1,58 |
|                                                         | 7,00  | 75  | 58  | 1,40 | 105  | 81  | 1,64 |
|                                                         | 7,50  | 80  | 61  | 1,45 | 112  | 86  | 1,70 |
|                                                         | 8,00  | 85  | 65  | 1,49 | 119  | 91  | 1,75 |
|                                                         | 8,50  | 90  | 68  | 1,54 | 125  | 96  | 1,80 |
|                                                         | 9,00  | 94  | 72  | 1,59 | 132  | 101 | 1,86 |
|                                                         | 9,50  | 99  | 75  | 1,63 | 139  | 106 | 1,91 |
|                                                         | 10,00 | 104 | 79  | 1,67 | 145  | 110 | 1,96 |
|                                                         | 11,00 | 113 | 86  | 1,75 | 159  | 120 | 2,05 |
|                                                         | 12,00 | 123 | 93  | 1,83 | 172  | 130 | 2,14 |
|                                                         | 13,00 | 132 | 100 | 1,91 | 185  | 140 | 2,23 |
|                                                         | 14,00 | 142 | 107 | 1,98 | 199  | 150 | 2,32 |
|                                                         | 15,00 | 151 | 114 | 2,05 | 212  | 160 | 2,40 |
|                                                         | 16,00 | 161 | 121 | 2,11 | 225  | 169 | 2,48 |
|                                                         | 17,00 | 171 | 128 | 2,18 | 239  | 179 | 2,55 |
|                                                         | 18,00 | 180 | 135 | 2,24 | 252  | 189 | 2,63 |
|                                                         | 19,00 | 190 | 142 | 2,30 | 265  | 199 | 2,70 |
|                                                         | 20,00 | 199 | 149 | 2,36 | 279  | 208 | 2,77 |
|                                                         | 21,00 | 209 | 156 | 2,42 | 292  | 218 | 2,84 |
|                                                         | 22,00 | 218 | 163 | 2,48 | 305  | 228 | 2,90 |
|                                                         | 23,00 | 228 | 170 | 2,53 | 319  | 238 | 2,97 |
|                                                         | 24,00 | 237 | 177 | 2,59 | 332  | 248 | 3,03 |
|                                                         | 25,00 | 247 | 184 | 2,64 | 345  | 258 | 3,09 |
|                                                         | 26,00 | 256 | 191 | 2,69 | 359  | 268 | 3,16 |
|                                                         | 27,00 | 266 | 198 | 2,75 | 372  | 278 | 3,22 |
|                                                         | 28,00 | 275 | 205 | 2,80 | 385  | 287 | 3,28 |
|                                                         | 29,00 | 285 | 212 | 2,85 | 399  | 297 | 3,33 |
|                                                         | 30,00 | 294 | 219 | 2,89 | 412  | 307 | 3,39 |
|                                                         | 32,00 | 313 | 233 | 2,99 | 439  | 326 | 3,50 |
|                                                         | 34,00 | 332 | 247 | 3,08 | 465  | 346 | 3,61 |
|                                                         | 36,00 | 351 | 262 | 3,17 | 492  | 366 | 3,71 |
|                                                         | 38,00 | 370 | 276 | 3,26 | 519  | 386 | 3,82 |
|                                                         | 40,00 | 390 | 290 | 3,34 | 545  | 406 | 3,91 |
|                                                         | 42,00 | 409 | 304 | 3,42 | 572  | 426 | 4,01 |
|                                                         | 44,00 | 428 | 318 | 3,50 | 599  | 446 | 4,11 |
|                                                         | 46,00 | 447 | 333 | 3,58 | 625  | 466 | 4,20 |
|                                                         | 48,00 | 466 | 347 | 3,66 | 652  | 486 | 4,29 |
|                                                         | 50,00 | 485 | 361 | 3,74 | 679  | 506 | 4,38 |