

**Hygienic 4020**

Safety valve made of stainless steel, angle type, with stainless steel spring

→ **Series Hygienic 4020**



■ MATERIAL



■ SPECIFICATION



■ SUITABLE FOR

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

■ EXAMPLES OF USE

- For the protection of:
- processes, plants and containers in the food and pharmaceutical industry for air, neutral and non-neutral vapours and gases, steam and liquids
  - food industry
  - Dairy industry
  - breweries and beverage industry
  - pharmaceutical industry
  - Cosmetic industry
  - Medical technology
  - Clean Service applications

■ FEATURES

- Smooth and faultless surface finish optimized for cleaning process
- Minimal dead space in inlet area and no gaps in the valve
- Exposed and rinsed o-ring seals
- Shape of valve body avoids forming of puddles in the valve after it has opened
- Suitable for CIP/SIP due to pneumatic lifting device
- Gap-free installation of seals in contact with the medium
- Surface roughness in the primary area Ra < 0.75µm
- Optional: electropolished and/or mechanically polished
- Moulded diaphragm for separating the product space from the springhousing
- Dead space ratio L/D ~ 1,5

For explanation see chapter 1.1 General information on the hygienic valves. Definition of surface quality and options according to Chapter 1.1 Table V-301.

■ APPROVALS

|                                 |                        |
|---------------------------------|------------------------|
| TÜV-Type test approval 2111     | D/G, F                 |
| EU type examination             | S/G, L                 |
| TR ZU 032/2013 - TR ZU 010/2011 | D/G (S/G), F (L)       |
| <b>Requirements</b>             |                        |
| DIN EN ISO 4126-1               | AD 2000 Data sheet A2  |
| DGR 2014/68/EU                  | VdTÜV Guideline SV 100 |
| TRD 421                         |                        |

■ MATERIALS

| Component                        | Material        | DIN EN | ASME  |
|----------------------------------|-----------------|--------|-------|
| Body                             | Stainless steel | 1.4404 | 316 L |
| Inner parts, wetted              | Stainless steel | 1.4404 | 316 L |
| Upper section, other inner parts | Stainless steel | 1.4404 | 316 L |
| Spring                           | Stainless steel | 1.4310 | 302   |

|          |                         |   |
|----------|-------------------------|---|
| <b>t</b> | Standard with diaphragm | for neutral and non-neutral media.<br>Spring, moving parts and the environment are protected from being affected by the medium. |
|----------|-------------------------|---|

Parts which are difficult to clean in the guide, the spring housing and the spindle / disc combination are protected against soiling by elastomer diaphragm.

#### ■ MEDIUM

|           |                    |  |
|-----------|--------------------|--|
| <b>GF</b> | gaseous and liquid | Air, vapours, gases, liquids and - depending on safety valve version and seal - also for steam |
|-----------|--------------------|--|

#### ■ TYPE OF LIFTING MECHANISM

|          |   |
|----------|---|
| <b>P</b> | Pneumatic lifting device                              |
| <b>L</b> | with lifting lever                                    |
| <b>O</b> | without lifting device, with additional gas-tight cap |

#### ■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

| Connection type            |          | <b>KLSDIN</b> | <b>KLSISO</b> | <b>KLSASME</b> |
|----------------------------|----------|---------------|---------------|----------------|
| <b>Nominal diameter DN</b> |          |               | <b>25</b>     |                |
| <b>Inlet DN</b>            | Standard | 25            | 25            | 1 1/2"         |
|                            | optional | 40            | -             | -              |
| <b>Outlet DN</b>           | 25 (1")  | ■             | ■             |                |
|                            | 40 (1½)  | ■             | ■             | ■              |
|                            | 50 (2")  | ■             |               | ■              |

#### ■ TYPE OF CONNECTION INLET / OUTLET

|                          |          |                                     |                           |   |
|--------------------------|----------|-------------------------------------|---------------------------|---|
| <b>KLSDIN / KLSDIN</b>   | Standard | Clamp connection / Clamp connection | DIN 32676-A / DIN 32676-A | Pipe standard DIN 11850 / 11866-A           |
| <b>KLSISO / KLSISO</b>   |          | Clamp connection / Clamp connection | DIN 32676-B / DIN 32676-B | Pipe standard DIN EN ISO 1127 / DIN 11866-B |
| <b>KLSASME / KLSASME</b> |          | Clamp connection / Clamp connection | DIN 32676-C / DIN 32676-C | Pipe standard BS 4825-1 / DIN 11866-C       |

Other connection types possible on request.

#### ■ SEALS / DIAPHRAGM

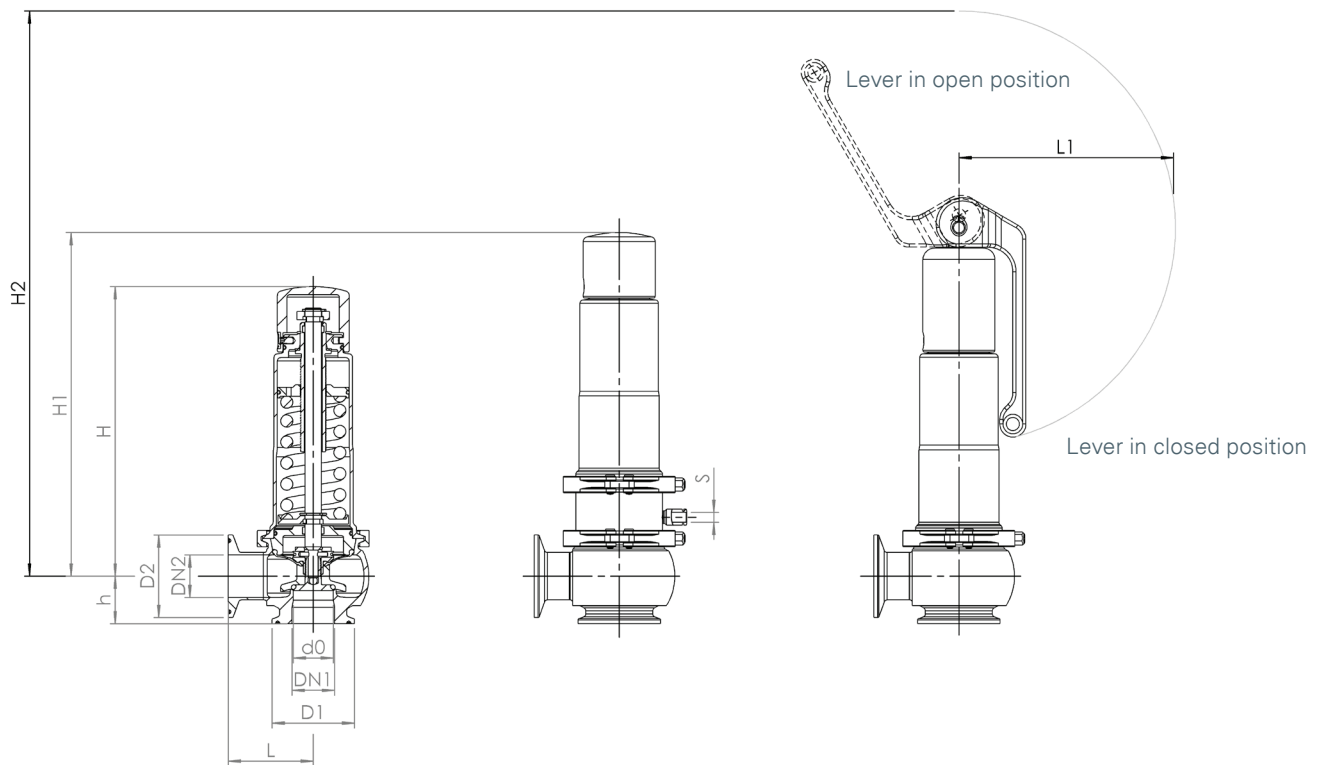
|             |   |                    |          |                 |
|-------------|---|--------------------|----------|-----------------|
| <b>FKM</b>  | Fluorcarbon                                 | Seals / diaphragms | FDA, USP | -20°C to +200°C |
| <b>EPDM</b> | Ethylene propylene diene                    | Seals / diaphragms | FDA, USP | -40°C to +170°C |
| <b>HNBR</b> | Hydrogenated acrylonitrile butadiene rubber | Seals / diaphragms | FDA      | -20°C to +150°C |

■ NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

| Series Hygienic 4020: Connection, installation dimensions, ranges of adjustment |                                 |                  |          |          |
|---|---------------------------------|------------------|----------|----------|
| Nominal diameter  | DN                              | 25               |          |          |
| Connection typ <sup>1)</sup>  |                                 | Clamp connection |          |          |
| Connection inlet  | DN1                             | 25               | 40       | 40       |
|   | D1                              | 50,5             | 50,5     | 50,5     |
| Connection outlet   | DN2                             | 25               | 40       | 50       |
|   | D2                              | 50,5             | 50,5     | 64       |
| Installation dimensions in mm   | L                               | 52               | 52       | 60       |
|   | L1 <sup>4)</sup>                | 132              | 132      | 132      |
|   | h                               | 29               | 29       | 29       |
|   | H                               | 177              | 177      | 177      |
|   | H1 <sup>3)</sup>                | 212              | 212      | 212      |
|   | H2 <sup>4)</sup>                | 350              | 350      | 350      |
|   | Compressed air connection in mm | S                | 6        | 6        |
| $\alpha_w / K_{dr}$ (F)   |                                 | 0,37             | 0,37     | 0,37     |
| $\alpha_w / K_{dr}$ (D/G) <sup>2)</sup>   |                                 | 0,50             | 0,50     | 0,50     |
| d0  |                                 | 24,5             | 24,5     | 24,5     |
| Weight  | kg                              | 1,8              | 1,8      | 1,8      |
|   | kg <sup>3)</sup>                | 2,2              | 2,2      | 2,2      |
|   | kg <sup>4)</sup>                | 2,3              | 2,3      | 2,3      |
|   | Range of adjustment             | bar              | 0,4 - 16 | 0,4 - 16 |

<sup>1)</sup> Further connection size possible, dimensions according to separate main dimension.  
<sup>2)</sup> Coefficient of flow for D/G valid for 6 bar or more, for smaller set pressures see values in capacity table.  
<sup>3)</sup> Values for version with pneumatic lifting device.  
<sup>4)</sup> Values for version with lifting lever.

■ MAIN DIMENSIONS, INSTALLATION DIMENSIONS



Series 4020 ■ INDIVIDUAL SELECTION / VALVE CONFIGURATION

| Series | Valve version | Medium | Lifting device | Nominal diameter DN | Connection type |        | Connection type |        | Seal | Options | Set pressure | Quantity |
|--------|---------------|--------|----------------|---------------------|-----------------|--------|-----------------|--------|------|---------|--------------|----------|
|        |               |        |                |                     | Inlet           | Outlet | Inlet           | Outlet |      |         |              |          |
| 4020   | t             | GF     | P              | 25                  | KLSDIN          | KLSDIN | 25              | 25     | EPDM | P07     | 3,2          | 1        |
| 4020   | t             | GF     |                |                     |                 |        |                 |        |      |         |              |          |
| 4020   | t             | GF     |                |                     |                 |        |                 |        |      |         |              |          |
| 4020   | t             | GF     |                |                     |                 |        |                 |        |      |         |              |          |
| 4020   | t             | GF     |                |                     |                 |        |                 |        |      |         |              |          |

■ TECHNICAL FINISHES, VARIANTS, ACCESSORIES

|     |  |                          |
|-----|--|--------------------------|
| S62 | Inductive proximity sensor, fitted, for indication of valve position, including connection cable 5m <sup>1</sup> | <input type="checkbox"/> |
|     |  | <input type="checkbox"/> |
|     |  | <input type="checkbox"/> |

<sup>1</sup>not available for version tGFL (with lifting lever)

■ PROPERTIES

DEFINITION OF SURFACE QUALITY AND OPTIONS ACCORDING TO CHAPTER 1.1 TABLE V-301

|     |   |                          |                          |
|-----|---|--------------------------|--------------------------|
| P01 | Oil- and grease-free production                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| P05 | Quality of surfaces in contact with media in inlet<br>Ra <= 0,375 | <input type="checkbox"/> | <input type="checkbox"/> |
| P07 | Electropolished surfaces  | <input type="checkbox"/> | <input type="checkbox"/> |
| P09 | Surfaces mechanically and electropolished                         | <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)<br>(pressure retaining part)                              | <input type="checkbox"/> | C09 | Seat tightness test with helium, leak detection method<br>under vacuum incl. Factory Inspection Certificate 3.1<br>acc. to DIN EN 10204 | <input type="checkbox"/> |
| C04   | TÜV/DEKRA individual inspection<br>acc. EN 10204 3.2 (TÜV/DEKRA-APZ)  | <input type="checkbox"/> | C10 | Certificate of oil- and grease free production  | <input type="checkbox"/> |
| C05-1 | Sealing material<br>Manufacturer certification (FDA, USP,...),<br>Please indicate description of certificate: ..... | <input type="checkbox"/> |     |   | <input type="checkbox"/> |

■ ADMISSIONS / ACCREDITATIONS

|     |   |                          |    |  |                          |
|-----|---|--------------------------|----|--|--------------------------|
| AA1 | EC Type examination acc. to Directive 2014/68/EU  | <input type="checkbox"/> | AL | Individual inspection by notified body inspector –<br>(body to be indicated):<br>..... | <input type="checkbox"/> |
| AA2 | TÜV component test acc. to VdTÜV specification sheet SV 100                                 | <input type="checkbox"/> |    |  | <input type="checkbox"/> |
| AA4 | EAC - certificate/declaration with passport for the valve<br>and laser marking of the valve | <input type="checkbox"/> |    |  | <input type="checkbox"/> |
|     |   |                          |    |  | <input type="checkbox"/> |

■ ENQUIRY

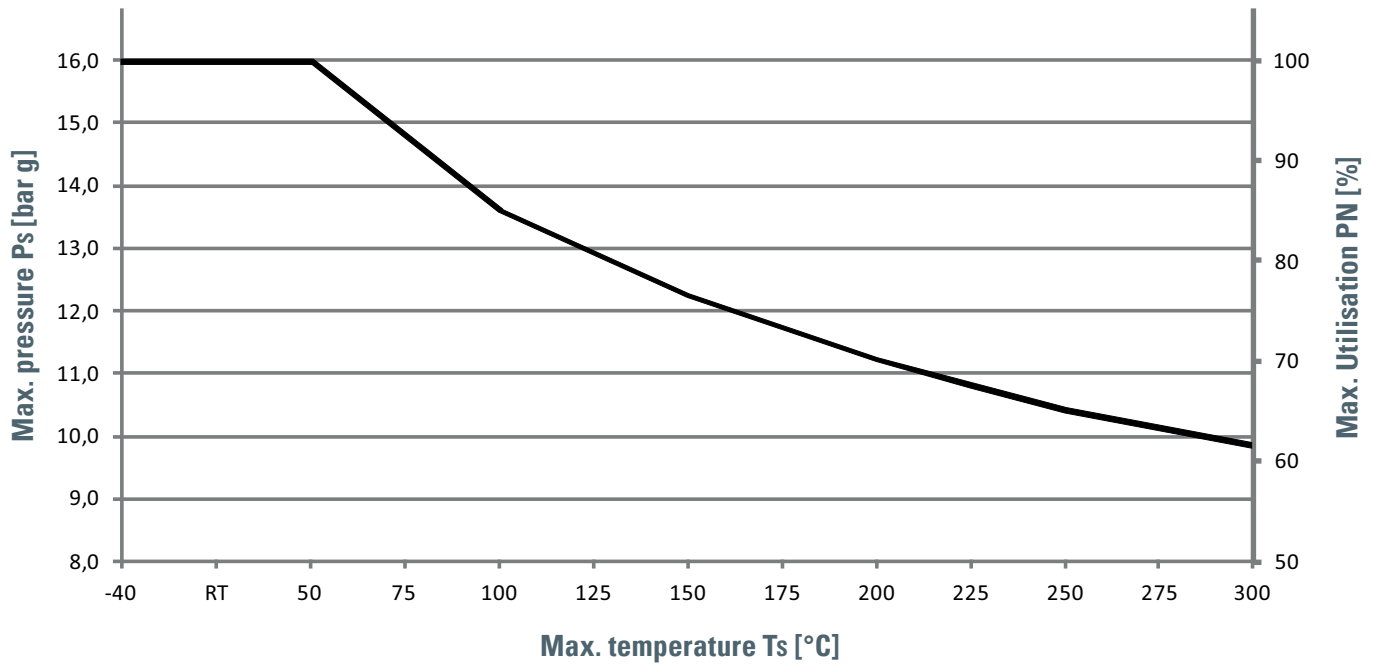
Copy and send to: [order@goetze-armaturen.de](mailto:order@goetze-armaturen.de).

Order form easily to be found online under the section for each series.

| Series Hygienic 4020: Blowing-off rates at 10% above set pressure |                      |                          |        |       |      |
|---|----------------------|--------------------------|--------|-------|------|
| Nominal diameter DN   | Set pressure bar (g) | 25                       |        |       |      |
|   |                      | d <sub>0</sub> = 24,5 mm |        |       |      |
|   |                      | I                        | II     | III   |      |
| Air I<br>Nm <sup>3</sup> /h                                       | 0,4                  | 193,7                    | 159,8  | 6,2   |      |
|   | 0,7                  | 258,2                    | 207,3  | 7,9   |      |
|   | 1,0                  | 317,3                    | 252,6  | 9,3   |      |
|   | 1,5                  | 421,7                    | 333,3  | 11,4  |      |
|   | 2,0                  | 514,4                    | 404,1  | 13,1  |      |
|   | 2,5                  | 602,8                    | 471,3  | 14,7  |      |
|   | 3,0                  | 691,2                    | 538,2  | 16,1  |      |
|   | 3,5                  | 779,6                    | 604,9  | 17,4  |      |
|   | Steam II<br>kg/h     | 4,0                      | 868,0  | 671,5 | 18,6 |
|   |                      | 4,5                      | 956,5  | 737,8 | 19,7 |
| 5,0   |                      | 1044,9                   | 804,1  | 20,8  |      |
| Water III<br>m <sup>3</sup> /h                                    | 5,5                  | 1133,3                   | 870,2  | 21,8  |      |
|   | 6,0                  | 1221,7                   | 936,1  | 22,8  |      |
|   | 6,5                  | 1310,1                   | 1002,2 | 23,7  |      |
|   | 7,0                  | 1398,5                   | 1068,2 | 24,6  |      |
|   | 7,5                  | 1486,9                   | 1134,0 | 25,5  |      |
|   | 8,0                  | 1575,3                   | 1199,8 | 26,3  |      |
|   | 8,5                  | 1663,7                   | 1265,5 | 27,2  |      |
|   | 9,0                  | 1752,2                   | 1331,2 | 27,9  |      |
|   | 9,5                  | 1840,6                   | 1396,9 | 28,7  |      |
|   | 10,0                 | 1929,0                   | 1462,6 | 29,5  |      |
|   | 11,0                 | 2105,8                   | 1594,1 | 30,9  |      |
| 12,0  | 2282,6               | 1725,2                   | 32,3   |       |      |
| 13,0  | 2459,5               | 1856,2                   | 33,6   |       |      |
| 14,0  | 2636,3               | 1987,8                   | 34,9   |       |      |
| 15,0  | 2813,1               | 2119,3                   | 36,1   |       |      |
| 16,0  | 2989,9               | 2250,2                   | 37,3   |       |      |

**Pressure-/ temperature rating**

PN 16 | Material: 1.4404 / 1.4435



**Control air pneumatic lifting device (max. 6 bar)**

