

## WILLBRANDT Abgaskompensator mit Festflanschen

### Typ 204

### Typ 205 (mit Innenleitrohr)

Der Typ 204 ist ein mehrlagiger Abgaskompensator mit Festflanschen. Er ist speziell konzipiert für den Betrieb in Anlagen mit geringen Betriebsdrücken (bis max. 1 barg).

Dieser Kompensator lässt sowohl axiale, laterale wie auch angulare Bewegungen zu.

#### Beschreibung

Neben den aufgeführten Standardbaulängen kann die Baulänge speziell auf Ihre Bedürfnisse angepasst gefertigt werden. Dieser Kompensator kann auch in anderen Werkstoffen (siehe Seite 179) gefertigt werden.

Die angegebenen Bewegungen stellen die einzelnen Maximalwerte dar.

Zur Ermittlung kombinierter Bewegungsmöglichkeiten verwenden Sie bitte das Bewegungsschaubild auf Seite 10.

#### Ausführung

Zur Realisierung größerer Kompensatorenbaulängen sind Varianten mit Zwischenrohr aus Balgmaterial (Ausführung 3) bzw. aus einem eingeschweißten Zwischenrohr (Ausführung 2) erhältlich.

#### Anwendung

Abgaskompensatoren kommen in einer Vielzahl von Anwendungen zum Einsatz, z. B. Turbinenauslassstutzen, Aggregaten, Generatoren, Schiffsantriebe, Erstausrüster-Motoren und Hilfssysteme.

Abgaskompensatoren können für jede spezielle Anforderung und Anwendung kundenspezifisch angefertigt werden.

#### Vorteile

- Gasdicht und beständig gegen Korrosion und hohen Temperaturen
- Nimmt Schwingungen auf
- Die leichte Bauweise in Kombination mit sehr niedrigen Federraten verringern die auf die Rohrleitungskomponenten wirksamen Lasten
- Platzsparend

## WILLBRANDT Exhaust expansion with fixed flanges

### Type 204

### Type 205 (with internal sleeve)



Type 204 is a multi-layer exhaust expansion joint with fixed flanges. It is designed specifically for operation in installations with low operating pressures (up to maximum 1 barg).

This expansion joint allows axial, lateral and angular movements.

#### Description

In addition to the given standard lengths, other lengths are available to meet specific requirements. This expansion joint can also be produced in other materials (see page 179).

The specified movements represent the individual maximum values. For determining combined movements, refer to the movement diagram on page 10.

#### Versions

For longer expansion joint lengths, inversions are available with an intermediate pipe of bellows material (version 3) or a welded intermediate pipe (version 2).

#### Applications

Exhaust expansion joints are used in a wide range of applications, e.g. turbine exhausts, apparatus, generators, marine propulsion, OEM motors and auxiliary systems.

Exhaust expansion joints can be made to suit all specific customer requirements and applications.

#### Advantages

- Gas-tight and resistant to corrosion and high temperatures
- Absorb vibrations
- Lightweight design combined with very low spring rates reduce loads exerted on pipeline components
- Space-saving

## WILLBRANDT Abgaskompensator mit Festflanschen

### Typ 204

### Typ 205 (mit Innenleitrohr)

## WILLBRANDT Exhaust expansion with fixed flanges

### Typ 204

### Typ 205 (with internal sleeve)

|                                           |                                                                                                                                                                                                                                                                                     |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Einsatzbeispiele</b>                   | Flüssige und gasförmige Medien im Niederdruckbetrieb, z. B. Abgasanlagen im Schiffbau, Biogasanlagen, Blockheizkraftwerke etc.                                                                                                                                                      |
| <b>Standardmäßiger Aufbau</b>             | Mehrlagiger Wellrohrbalg aus 1.4541 mit glatten Flanschen aus C-Stahl (roh) gebohrt nach DIN 86044-1.                                                                                                                                                                               |
| <b>Zulässige Betriebsdaten (Standard)</b> | 1,0 barg / 550 °C<br>Höhere Drücke auf Anfrage.                                                                                                                                                                                                                                     |
| <b>Zubehör</b>                            | Innenleitrohr, Außenschutzrohr                                                                                                                                                                                                                                                      |
| <b>Hinweis</b>                            | Bei Verwendung von Leitrohren vermindert sich die Möglichkeit der Aufnahme der lateralen oder angularen Bewegungen um mind. 90 %. Die Ausführung 3 ist nicht vakuumfest. Bitte beachten Sie bei Ihrer Planung die Medienverträglichkeit der zu verwendenden Kompensatormaterialien. |

|                                   |                                                                                                                                                                                                                                                                                                |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Application examples</b>       | Liquid and gaseous media in low pressure operation, e.g. exhaust systems in shipbuilding, biogas plants, block-type thermal power stations, etc.                                                                                                                                               |
| <b>Standard design</b>            | Multi-layer corrugated tube bellows of 1.4541 with smooth flanges of carbon steel (raw) drilled according to DIN 86044-1.                                                                                                                                                                      |
| <b>Permissible operating data</b> | 1.0 barg / 550 °C<br>Higher pressures on request.                                                                                                                                                                                                                                              |
| <b>Accessories</b>                | Internal sleeve, external protective sleeve                                                                                                                                                                                                                                                    |
| <b>Note</b>                       | When using internal sleeves, the possibility to compensate for lateral or angular movements reduces by minimum 90 %. Version 3 is not vacuum-tight. To be noted is that the media compatibility of the expansion joint material to be used should be taken into account in the planning phase. |

## Ausführungsvarianten / Versions



## Typ 204 Abmessungen

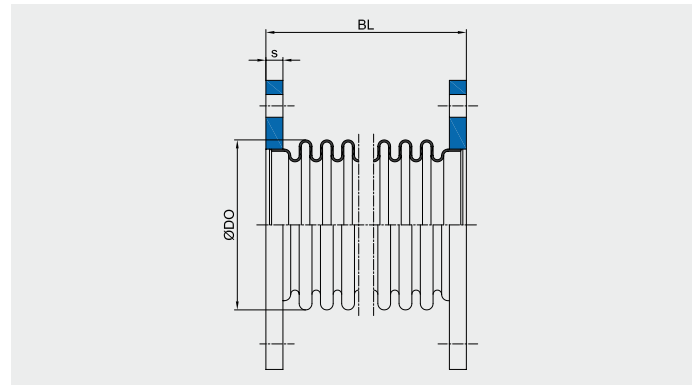
### Ausführung 1

## Type 204 Specifications

### Model 1

### Druckstufe 1 barg (PN 1)

### Design pressure 1 barg (PN 1)



| DN  | Länge<br>Length | Balg<br>Bellow |                        | Flansch<br>Flanges | Bewegungsaufnahme<br>Movement |                      |                          | Verstellkraft<br>Springrate |                       |                          | Gewicht<br>Weight | Artikel<br>Article |
|-----|-----------------|----------------|------------------------|--------------------|-------------------------------|----------------------|--------------------------|-----------------------------|-----------------------|--------------------------|-------------------|--------------------|
|     |                 | BL<br>mm       | WF*<br>cm <sup>2</sup> |                    | axial<br>25N<br>mm            | lateral<br>2AN<br>mm | angular<br>2aN<br>°/deg. | axial<br>C5<br>N/mm         | lateral<br>CA<br>N/mm | angular<br>Ca<br>Nm/deg. |                   |                    |
| 50  | 140             | 69             | 28                     | 20                 | 30                            | 18                   | 50                       | 73                          | 42,0                  | 0,6                      | 5,8               | 204-01-030-0050    |
| 50  | 210             | 69             | 28                     | 20                 | 49                            | 50                   | 50                       | 45                          | 9,2                   | 0,4                      | 5,9               | 204-01-049-0050    |
| 65  | 130             | 87             | 46                     | 20                 | 34                            | 15                   | 50                       | 64                          | 79,0                  | 0,9                      | 6,7               | 204-01-034-0065    |
| 65  | 190             | 87             | 46                     | 20                 | 55                            | 39                   | 50                       | 40                          | 18,0                  | 0,6                      | 6,9               | 204-01-055-0065    |
| 65  | 235             | 87             | 46                     | 20                 | 73                            | 68                   | 50                       | 31                          | 8,3,0                 | 0,4                      | 7,0               | 204-01-073-0065    |
| 80  | 135             | 114            | 79                     | 20                 | 34                            | 8                    | 38                       | 64                          | 272,0                 | 1,4                      | 7,6               | 204-01-034-0080    |
| 80  | 180             | 114            | 79                     | 20                 | 56                            | 22                   | 50                       | 38                          | 59,0                  | 0,9                      | 7,9               | 204-01-056-0080    |
| 80  | 235             | 114            | 79                     | 20                 | 85                            | 51                   | 50                       | 26                          | 18,0                  | 0,6                      | 8,0               | 204-01-085-0080    |
| 100 | 145             | 145            | 131                    | 22                 | 49                            | 9                    | 43                       | 40                          | 359,0                 | 1,5                      | 9,5               | 204-01-049-0100    |
| 100 | 180             | 144            | 130                    | 22                 | 70                            | 19                   | 50                       | 29                          | 107,0                 | 1,1                      | 9,6               | 204-01-070-0100    |
| 100 | 255             | 144            | 129                    | 22                 | 119                           | 59                   | 50                       | 27                          | 33,0                  | 1,0                      | 10,7              | 204-01-119-0100    |
| 125 | 145             | 171            | 188                    | 22                 | 49                            | 7                    | 36                       | 46                          | 602,0                 | 2,4                      | 11,7              | 204-01-049-0125    |
| 125 | 195             | 171            | 187                    | 22                 | 84                            | 23                   | 50                       | 42                          | 184,0                 | 2,2                      | 12,7              | 204-01-084-0125    |
| 125 | 290             | 172            | 186                    | 22                 | 125                           | 65                   | 50                       | 47                          | 50,0                  | 2,4                      | 14,4              | 204-01-125-0125    |
| 150 | 165             | 204            | 271                    | 24                 | 54                            | 7                    | 33                       | 51                          | 789,0                 | 3,8                      | 15,3              | 204-01-054-0150    |
| 150 | 240             | 204            | 271                    | 24                 | 109                           | 31                   | 50                       | 26                          | 95,0                  | 1,9                      | 15,9              | 204-01-109-0150    |
| 150 | 390             | 203            | 266                    | 24                 | 158                           | 94                   | 50                       | 48                          | 35,0                  | 3,5                      | 19,3              | 204-01-158-0150    |
| 200 | 155             | 257            | 442                    | 16                 | 76                            | 10                   | 36                       | 40                          | 713,0                 | 4,9                      | 11,4              | 204-01-076-0200    |
| 200 | 225             | 256            | 440                    | 16                 | 130                           | 32                   | 50                       | 24                          | 132,0                 | 2,9                      | 12,4              | 204-01-130-0200    |
| 200 | 275             | 259            | 444                    | 16                 | 149                           | 48                   | 50                       | 32                          | 98,0                  | 4,0                      | 13,8              | 204-01-149-0200    |
| 250 | 155             | 309            | 663                    | 16                 | 67                            | 7                    | 26                       | 59                          | 1520,0                | 11,0                     | 13,6              | 204-01-067-0250    |
| 250 | 275             | 314            | 673                    | 16                 | 144                           | 38                   | 50                       | 39                          | 178,0                 | 7,3                      | 16,6              | 204-01-144-0250    |
| 250 | 370             | 313            | 667                    | 16                 | 194                           | 73                   | 50                       | 47                          | 96,0                  | 8,6                      | 22,1              | 204-01-194-0250    |
| 300 | 170             | 365            | 927                    | 16                 | 77                            | 7                    | 25                       | 70                          | 2440,0                | 18,0                     | 19,6              | 204-01-077-0300    |
| 300 | 220             | 370            | 943                    | 16                 | 118                           | 18                   | 39                       | 21                          | 295,0                 | 5,3                      | 19,6              | 204-01-118-0300    |
| 300 | 385             | 365            | 923                    | 16                 | 207                           | 70                   | 50                       | 48                          | 124,0                 | 13,0                     | 28,1              | 204-01-207-0300    |
| 350 | 135             | 404            | 1132                   | 16                 | 54                            | 3                    | 16                       | 39                          | 2800,0                | 13,0                     | 23,1              | 204-01-054-0350    |
| 350 | 210             | 402            | 1126                   | 16                 | 118                           | 16                   | 35                       | 22                          | 383,0                 | 6,9                      | 24,8              | 204-01-118-0350    |
| 350 | 365             | 400            | 1113                   | 16                 | 219                           | 64                   | 50                       | 45                          | 170,0                 | 14,0                     | 34,0              | 204-01-219-0350    |
| 400 | 185             | 461            | 1478                   | 16                 | 90                            | 8                    | 23                       | 59                          | 2280,0                | 25,0                     | 27,8              | 204-01-090-0400    |
| 400 | 260             | 461            | 1478                   | 16                 | 151                           | 23                   | 39                       | 36                          | 494,0                 | 15,0                     | 29,8              | 204-01-151-0400    |
| 400 | 365             | 457            | 1459                   | 16                 | 226                           | 56                   | 50                       | 44                          | 243,0                 | 18,0                     | 38,0              | 204-01-226-0400    |
| 450 | 185             | 511            | 1842                   | 16                 | 91                            | 7                    | 21                       | 69                          | 3330,0                | 36,0                     | 32,0              | 204-01-091-0450    |
| 450 | 260             | 511            | 1842                   | 16                 | 152                           | 21                   | 35                       | 42                          | 720,0                 | 22,0                     | 34,3              | 204-01-152-0450    |
| 450 | 365             | 510            | 1832                   | 16                 | 223                           | 49                   | 50                       | 44                          | 303,0                 | 23,0                     | 43,5              | 204-01-223-0450    |
| 500 | 210             | 566            | 2263                   | 16                 | 108                           | 8                    | 23                       | 72                          | 3600,0                | 46,0                     | 34,7              | 204-01-108-0500    |
| 500 | 305             | 564            | 2254                   | 16                 | 184                           | 27                   | 39                       | 45                          | 698,0                 | 28,0                     | 37,2              | 204-01-184-0500    |
| 500 | 415             | 564            | 2248                   | 16                 | 270                           | 59                   | 50                       | 47                          | 320,0                 | 29,0                     | 47,3              | 204-01-270-0500    |
| 600 | 250             | 679            | 3257                   | 20                 | 101                           | 6                    | 17                       | 129                         | 9320,0                | 116,0                    | 54,2              | 204-01-101-0600    |
| 600 | 340             | 679            | 3257                   | 20                 | 177                           | 21                   | 31                       | 74                          | 1740,0                | 67,0                     | 58,0              | 204-01-177-0600    |
| 600 | 460             | 679            | 3257                   | 20                 | 279                           | 52                   | 49                       | 47                          | 455,0                 | 43,0                     | 63,8              | 204-01-279-0600    |
| 700 | 230             | 777            | 4335                   | 20                 | 98                            | 5                    | 15                       | 150                         | 14100,0               | 180,0                    | 62,3              | 204-01-098-0700    |
| 700 | 320             | 778            | 4341                   | 20                 | 176                           | 18                   | 27                       | 82                          | 2590,0                | 99,0                     | 66,7              | 204-01-176-0700    |
| 700 | 460             | 781            | 4358                   | 20                 | 283                           | 45                   | 43                       | 47                          | 608,0                 | 56,0                     | 73,4              | 204-01-283-0700    |
| 800 | 200             | 886            | 5654                   | 20                 | 80                            | 3                    | 10                       | 169                         | 38200,0               | 265,0                    | 71,0              | 204-01-080-0800    |
| 800 | 290             | 886            | 5654                   | 20                 | 156                           | 12                   | 21                       | 85                          | 4810,0                | 133,0                    | 76,0              | 204-01-156-0800    |
| 800 | 440             | 884            | 5640                   | 20                 | 282                           | 40                   | 38                       | 50                          | 847,0                 | 78,0                     | 83,7              | 204-01-282-0800    |
| 900 | 220             | 990            | 7110                   | 20                 | 79                            | 2                    | 9                        | 173                         | 49100,0               | 342,0                    | 76,3              | 204-01-079-0900    |
| 900 | 305             | 990            | 7110                   | 20                 | 144                           | 9                    | 17                       | 87                          | 6400,0                | 171,0                    | 81,9              | 204-01-144-0900    |
| 900 | 425             | 990            | 7110                   | 20                 | 247                           | 28                   | 29                       | 52                          | 1380,0                | 103,0                    | 93,4              | 204-01-247-0900    |

\*WF = wirksame Fläche / effective area

Weitere Abmessungen und Werkstoffe auf Anfrage. /  
Other dimensions and materials on request.

## Typ 204 Abmessungen

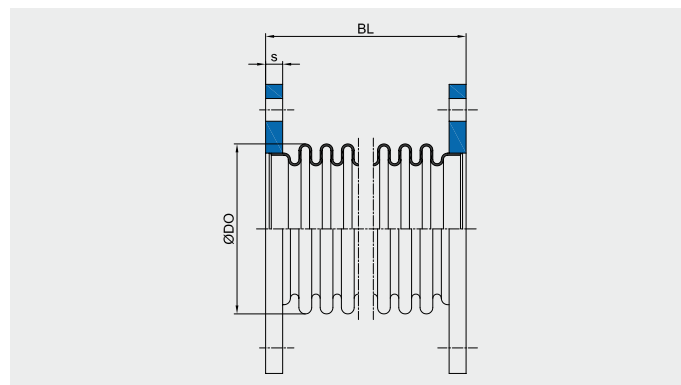
### Ausführung 1

## Type 204 Specifications

### Model 1

### Druckstufe 1 barg (PN 1)

### Design pressure 1 barg (PN 1)



| DN   | Länge<br>Length | Balg<br>Bellows |           | Flansch<br>Flanges | Bewegungsaufnahme<br>Movement |                    |                      | Verstellkraft rate<br>Springrate |                     |                       | Gewicht<br>Weight        | Artikel<br>Article |
|------|-----------------|-----------------|-----------|--------------------|-------------------------------|--------------------|----------------------|----------------------------------|---------------------|-----------------------|--------------------------|--------------------|
|      |                 | BL<br>mm        | ØDO<br>mm |                    | s<br>mm                       | axial<br>25N<br>mm | lateral<br>2AN<br>mm | angular<br>2aN<br>°/deg.         | axial<br>C5<br>N/mm | lateral<br>CA<br>N/mm | angular<br>Ca<br>Nm/deg. |                    |
| 1000 | 215             | 1096            | 8749      | 20                 | 71                            | 2                  | 7                    | 165                              | 60400               | 399,0                 | 84,1                     | 204-01-071-1000    |
| 1000 | 275             | 1098            | 8765      | 20                 | 120                           | 6                  | 13                   | 92                               | 12100               | 224,0                 | 93,5                     | 204-01-120-1000    |
| 1000 | 425             | 1093            | 8724      | 20                 | 246                           | 25                 | 26                   | 55                               | 1790                | 133,0                 | 104,0                    | 204-01-246-1000    |
| 1100 | 225             | 1198            | 10540     | 20                 | 95                            | 3                  | 9                    | 144                              | 35600               | 421,0                 | 96,0                     | 204-01-095-1100    |
| 1100 | 315             | 1194            | 10503     | 20                 | 170                           | 11                 | 16                   | 95                               | 7630                | 278,0                 | 103,0                    | 204-01-170-1100    |
| 1100 | 435             | 1197            | 10531     | 20                 | 274                           | 28                 | 27                   | 55                               | 1750                | 159,0                 | 114,0                    | 204-01-274-1100    |
| 1200 | 195             | 1264            | 11794     | 20                 | 101                           | 3                  | 9                    | 163                              | 44200               | 533,0                 | 104,0                    | 204-01-101-1200    |
| 1200 | 285             | 1264            | 11813     | 20                 | 178                           | 11                 | 16                   | 101                              | 8860                | 329,0                 | 112,0                    | 204-01-178-1200    |
| 1200 | 435             | 1259            | 11765     | 20                 | 286                           | 30                 | 26                   | 71                               | 2040                | 232,0                 | 124,0                    | 204-01-286-1200    |
| 1300 | 165             | 1366            | 13818     | 20                 | 75                            | 1                  | 6                    | 218                              | 122800              | 835,0                 | 108,0                    | 204-01-075-1300    |
| 1300 | 225             | 1364            | 13818     | 20                 | 127                           | 5                  | 10                   | 151                              | 30600               | 580,0                 | 112,0                    | 204-01-127-1300    |
| 1300 | 345             | 1364            | 13797     | 20                 | 227                           | 16                 | 19                   | 78                               | 4880                | 299,0                 | 125,0                    | 204-01-227-1300    |
| 1400 | 165             | 1466            | 15980     | 20                 | 75                            | 1                  | 6                    | 234                              | 152400              | 1040,0                | 116,0                    | 204-01-075-1400    |
| 1400 | 225             | 1464            | 15980     | 20                 | 127                           | 4                  | 10                   | 162                              | 38000               | 719,0                 | 121,0                    | 204-01-127-1400    |
| 1400 | 345             | 1464            | 15958     | 20                 | 227                           | 15                 | 18                   | 84                               | 6050                | 371,0                 | 134,0                    | 204-01-227-1400    |
| 1500 | 165             | 1565            | 18287     | 20                 | 75                            | 1                  | 5                    | 259                              | 192400              | 1320,0                | 124,0                    | 204-01-075-1500    |
| 1500 | 225             | 1564            | 18299     | 20                 | 127                           | 4                  | 9                    | 173                              | 46400               | 879,0                 | 129,0                    | 204-01-127-1500    |
| 1500 | 345             | 1564            | 18275     | 20                 | 227                           | 14                 | 17                   | 90                               | 7400                | 453,0                 | 143,0                    | 204-01-227-1500    |
| 1600 | 165             | 1664            | 20750     | 20                 | 75                            | 1                  | 5                    | 285                              | 239600              | 1650,0                | 132,0                    | 204-01-075-1600    |
| 1600 | 225             | 1664            | 20776     | 20                 | 127                           | 4                  | 8                    | 184                              | 56000               | 1070,0                | 137,0                    | 204-01-127-1600    |
| 1600 | 345             | 1664            | 20750     | 20                 | 227                           | 13                 | 16                   | 95                               | 8930                | 547,0                 | 152,0                    | 204-01-227-1600    |
| 1700 | 165             | 1763            | 23368     | 20                 | 76                            | 1                  | 5                    | 313                              | 298000              | 2030,0                | 140,0                    | 204-01-076-1700    |
| 1700 | 225             | 1764            | 23409     | 20                 | 127                           | 4                  | 8                    | 195                              | 66900               | 1270,0                | 145,0                    | 204-01-127-1700    |
| 1700 | 345             | 1763            | 23368     | 20                 | 228                           | 13                 | 15                   | 105                              | 11100               | 677,0                 | 161,0                    | 204-01-228-1700    |
| 1800 | 165             | 1864            | 26142     | 20                 | 76                            | 1                  | 4                    | 343                              | 363900              | 2490,0                | 145,0                    | 204-01-076-1800    |
| 1800 | 225             | 1864            | 26199     | 20                 | 127                           | 3                  | 7                    | 206                              | 79100               | 1500,0                | 153,0                    | 204-01-127-1800    |
| 1800 | 345             | 1864            | 26142     | 20                 | 229                           | 12                 | 14                   | 115                              | 13600               | 830,0                 | 170,0                    | 204-01-229-1800    |
| 1900 | 165             | 1962            | 29117     | 20                 | 74                            | 1                  | 4                    | 390                              | 448500              | 3150,0                | 152,0                    | 204-01-074-1900    |
| 1900 | 225             | 1963            | 29132     | 20                 | 126                           | 3                  | 7                    | 225                              | 95100               | 1820,0                | 161,0                    | 204-01-126-1900    |
| 1900 | 345             | 1963            | 29132     | 20                 | 228                           | 11                 | 13                   | 125                              | 16400               | 1020,0                | 179,0                    | 204-01-228-1900    |
| 2000 | 165             | 2061            | 32204     | 20                 | 72                            | 1                  | 4                    | 425                              | 529400              | 3800,0                | 163,0                    | 204-01-072-2000    |
| 2000 | 225             | 2061            | 32204     | 20                 | 121                           | 3                  | 6                    | 255                              | 115000              | 2280,0                | 170,0                    | 204-01-121-2000    |
| 2000 | 344             | 2061            | 32204     | 20                 | 144                           | 0                  | 0                    | 142                              | 16500               | 1270,0                | 189,0                    | 204-01-144-2000    |
| 2100 | 170             | 2160            | 35449     | 20                 | 80                            | 1                  | 4                    | 359                              | 485600              | 3540,0                | 172,0                    | 204-01-080-2100    |
| 2100 | 230             | 2161            | 35466     | 20                 | 131                           | 3                  | 7                    | 208                              | 102500              | 2040,0                | 184,0                    | 204-01-131-2100    |
| 2100 | 350             | 2162            | 35483     | 20                 | 231                           | 10                 | 12                   | 111                              | 17200               | 1100,0                | 208,0                    | 204-01-231-2100    |
| 2200 | 170             | 2260            | 38865     | 20                 | 80                            | 1                  | 4                    | 375                              | 556200              | 4050,0                | 180,0                    | 204-01-080-2200    |
| 2200 | 230             | 2260            | 38865     | 20                 | 131                           | 3                  | 6                    | 225                              | 121600              | 2430,0                | 192,0                    | 204-01-131-2200    |
| 2200 | 350             | 2260            | 38865     | 20                 | 229                           | 10                 | 11                   | 125                              | 21200               | 1350,0                | 217,0                    | 204-01-229-2200    |

\*WF = wirksame Fläche / effective area

Weitere Abmessungen und Werkstoffe auf Anfrage. /  
Other dimensions and materials on request.

## Typ 204 Abmessungen

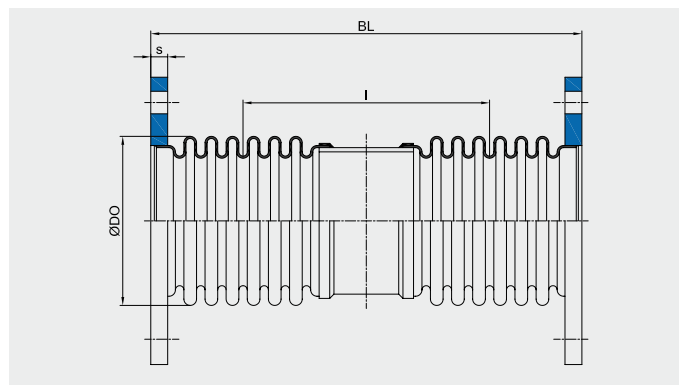
### Ausführung 2

## Type 204 Specifications

### Model 2

### Druckstufe 1 barg (PN 1)

### Design pressure 1 barg (PN 1)



| DN   | Länge<br>Length | Balg<br>Bellows |           |                        | Flansch<br>Flanges | Bewegungsaufnahme<br>Movement |                    | Verstellkraftrate<br>Springrate |                     | Gewicht<br>Weight     | Artikel<br>Article |
|------|-----------------|-----------------|-----------|------------------------|--------------------|-------------------------------|--------------------|---------------------------------|---------------------|-----------------------|--------------------|
|      |                 | BL<br>mm        | ØDO<br>mm | WF*<br>cm <sup>2</sup> |                    | s<br>mm                       | axial<br>2δN<br>mm | lateral<br>2λN<br>mm            | axial<br>Cδ<br>N/mm | lateral<br>Cλ<br>N/mm |                    |
| 50   | 335             | 69              | 28        | 194                    | 20                 | 60                            | 140                | 37                              | 1,6                 | 6,4                   | 204-01-060-0050    |
| 65   | 315             | 87              | 46        | 184                    | 20                 | 69                            | 120                | 32                              | 2,6                 | 7,5                   | 204-01-069-0065    |
| 80   | 360             | 114             | 79        | 239                    | 20                 | 68                            | 122                | 32                              | 3,1                 | 9,3                   | 204-01-064-0080    |
| 100  | 355             | 145             | 131       | 225                    | 22                 | 99                            | 123                | 20                              | 3,8                 | 11,4                  | 204-01-092-0100    |
| 125  | 385             | 171             | 188       | 255                    | 22                 | 99                            | 122                | 23                              | 4,9                 | 14,7                  | 204-01-094-0125    |
| 150  | 420             | 204             | 271       | 276                    | 24                 | 109                           | 119                | 26                              | 6,6                 | 19,4                  | 204-01-101-0150    |
| 200  | 325             | 257             | 442       | 186                    | 16                 | 152                           | 77                 | 20                              | 19,0                | 15,2                  | 204-01-135-0200    |
| 250  | 385             | 309             | 663       | 246                    | 16                 | 134                           | 79                 | 30                              | 23,0                | 21,7                  | 204-01-122-0250    |
| 300  | 395             | 365             | 927       | 245                    | 16                 | 167                           | 77                 | 35                              | 41,0                | 30,4                  | 204-01-153-0300    |
| 350  | 365             | 404             | 1132      | 241                    | 16                 | 173                           | 57                 | 20                              | 28,0                | 33,3                  | 204-01-126-0350    |
| 400  | 410             | 461             | 1478      | 243                    | 16                 | 212                           | 75                 | 30                              | 53,0                | 39,7                  | 204-01-187-0400    |
| 450  | 440             | 511             | 1842      | 274                    | 16                 | 201                           | 77                 | 35                              | 61,0                | 47,4                  | 204-01-184-0450    |
| 500  | 475             | 566             | 2263      | 291                    | 16                 | 223                           | 79                 | 36                              | 72,0                | 49,4                  | 204-01-199-0500    |
| 600  | 580             | 679             | 3257      | 374                    | 20                 | 202                           | 79                 | 65                              | 117,0               | 76,2                  | 204-01-180-0600    |
| 700  | 610             | 777             | 4335      | 414                    | 20                 | 197                           | 79                 | 75                              | 138,0               | 86,9                  | 204-01-177-0700    |
| 800  | 570             | 886             | 5654      | 314                    | 20                 | 340                           | 77                 | 43                              | 172,0               | 102,0                 | 204-01-300-0800    |
| 900  | 610             | 990             | 7110      | 344                    | 20                 | 348                           | 76                 | 44                              | 197,0               | 116,0                 | 204-01-306-0900    |
| 1000 | 630             | 1098            | 8765      | 394                    | 20                 | 323                           | 68                 | 46                              | 201,0               | 136,0                 | 204-01-255-1000    |
| 1100 | 610             | 1198            | 10540     | 414                    | 20                 | 235                           | 57                 | 72                              | 326,0               | 142,0                 | 204-01-204-1100    |
| 1200 | 610             | 1264            | 11794     | 414                    | 20                 | 223                           | 54                 | 82                              | 356,0               | 154,0                 | 204-01-204-1200    |
| 1300 | 620             | 1364            | 13818     | 394                    | 20                 | 265                           | 57                 | 76                              | 419,0               | 160,0                 | 204-01-255-1300    |
| 1400 | 640             | 1464            | 15980     | 414                    | 20                 | 264                           | 57                 | 81                              | 472,0               | 175,0                 | 204-01-255-1400    |
| 1500 | 670             | 1564            | 18299     | 444                    | 20                 | 263                           | 57                 | 87                              | 504,0               | 191,0                 | 204-01-256-1500    |
| 1600 | 700             | 1664            | 20776     | 474                    | 20                 | 262                           | 58                 | 92                              | 535,0               | 208,0                 | 204-01-257-1600    |
| 1700 | 580             | 1764            | 23409     | 354                    | 20                 | 261                           | 39                 | 98                              | 1130,0              | 200,0                 | 204-01-254-1700    |
| 1800 | 600             | 1864            | 26199     | 374                    | 20                 | 260                           | 39                 | 103                             | 1200,0              | 215,0                 | 204-01-253-1800    |
| 1900 | 620             | 1963            | 29132     | 394                    | 20                 | 254                           | 38                 | 113                             | 1320,0              | 230,0                 | 204-01-251-1900    |
| 2000 | 660             | 2061            | 32204     | 434                    | 20                 | 242                           | 39                 | 128                             | 1360,0              | 250,0                 | 204-01-236-2000    |
| 2100 | 600             | 2161            | 35466     | 368                    | 20                 | 306                           | 33                 | 104                             | 1690,0              | 261,0                 | 204-01-264-2100    |
| 2200 | 620             | 2260            | 38865     | 388                    | 20                 | 299                           | 34                 | 113                             | 1810,0              | 277,0                 | 204-01-267-2200    |

\*WF = wirksame Fläche / effective area

\*\*I = Mittenabstand / center distance

Weitere Abmessungen und Werkstoffe auf Anfrage. /

Other dimensions and materials on request.

## Typ 204 Abmessungen

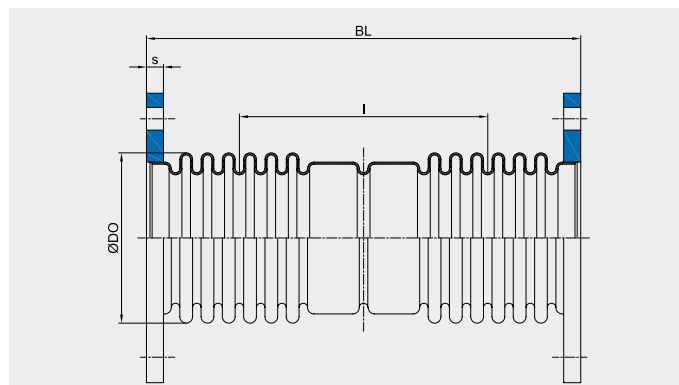
### Ausführung 3

## Type 204 Specifications

### Model 3

#### Druckstufe 1 barg (PN 1)

#### Design pressure 1 barg (PN 1)



| DN   | Länge<br>Length | Balg<br>Bellows |           |            | Flansch<br>Flanges | Bewegungsaufnahme<br>Movement |                    | Verstellkraftrate<br>Springrate |                     | Gewicht<br>Weight     | Artikel<br>Article |
|------|-----------------|-----------------|-----------|------------|--------------------|-------------------------------|--------------------|---------------------------------|---------------------|-----------------------|--------------------|
|      |                 | BL<br>mm        | ØDO<br>mm | WF*<br>cm² |                    | s<br>mm                       | axial<br>2δN<br>mm | lateral<br>2λN<br>mm            | axial<br>Cδ<br>N/mm | lateral<br>Cλ<br>N/mm |                    |
| 50   | 235             | 69              | 28        | 132        | 20                 | 38                            | 61                 | 57                              | 5,4                 | 5,9                   | 204-01-038-0050    |
| 65   | 245             | 87              | 46        | 150        | 20                 | 41                            | 62                 | 53                              | 6,6                 | 6,9                   | 204-01-041-0065    |
| 80   | 270             | 114             | 79        | 137        | 20                 | 61                            | 67                 | 32                              | 7,9                 | 8,0                   | 204-01-061-0080    |
| 100  | 240             | 145             | 131       | 116        | 22                 | 72                            | 53                 | 24                              | 14,0                | 9,9                   | 204-01-072-0100    |
| 125  | 245             | 170             | 187       | 120        | 22                 | 69                            | 45                 | 31                              | 24,0                | 12,1                  | 204-01-069-0125    |
| 150  | 310             | 204             | 271       | 154        | 24                 | 97                            | 66                 | 26                              | 18,0                | 16,2                  | 204-01-097-0150    |
| 200  | 285             | 258             | 444       | 144        | 16                 | 90                            | 44                 | 49                              | 61,0                | 13,2                  | 204-01-090-0200    |
| 250  | 285             | 312             | 669       | 144        | 16                 | 85                            | 34                 | 59                              | 111,0               | 15,9                  | 204-01-085-0250    |
| 300  | 285             | 363             | 923       | 144        | 16                 | 83                            | 28                 | 68                              | 178,0               | 20,8                  | 204-01-083-0300    |
| 350  | 295             | 401             | 1121      | 169        | 16                 | 86                            | 33                 | 62                              | 148,0               | 26,1                  | 204-01-086-0350    |
| 400  | 345             | 458             | 1464      | 195        | 16                 | 116                           | 45                 | 50                              | 115,0               | 29,8                  | 204-01-116-0400    |
| 450  | 345             | 509             | 1830      | 195        | 16                 | 113                           | 39                 | 55                              | 159,0               | 34,3                  | 204-01-113-0450    |
| 500  | 355             | 560             | 2238      | 194        | 16                 | 94                            | 30                 | 82                              | 297,0               | 35,9                  | 204-01-094-0500    |
| 550  | 360             | 609             | 2676      | 192        | 20                 | 90                            | 26                 | 98                              | 429,0               | 49,6                  | 204-01-090-0550    |
| 600  | 410             | 672             | 3211      | 211        | 20                 | 114                           | 33                 | 102                             | 436,0               | 57,9                  | 204-01-114-0600    |
| 700  | 465             | 781             | 4358      | 266        | 20                 | 139                           | 44                 | 85                              | 321,0               | 69,0                  | 204-01-139-0700    |
| 800  | 465             | 883             | 5634      | 266        | 20                 | 137                           | 38                 | 95                              | 463,0               | 78,7                  | 204-01-137-0800    |
| 900  | 465             | 985             | 7072      | 266        | 20                 | 134                           | 33                 | 105                             | 642,0               | 87,7                  | 204-01-134-0900    |
| 1000 | 465             | 1087            | 8674      | 266        | 20                 | 131                           | 30                 | 115                             | 862,0               | 96,8                  | 204-01-131-1000    |
| 1100 | 465             | 1191            | 10476     | 266        | 20                 | 129                           | 26                 | 125                             | 1140,0              | 107,0                 | 204-01-129-1100    |
| 1200 | 480             | 1263            | 11784     | 315        | 20                 | 148                           | 31                 | 113                             | 844,0               | 116,0                 | 204-01-148-1200    |
| 1300 | 480             | 1363            | 13787     | 315        | 20                 | 150                           | 29                 | 122                             | 1070,0              | 125,0                 | 204-01-150-1300    |
| 1400 | 480             | 1463            | 15947     | 315        | 20                 | 150                           | 27                 | 130                             | 1320,0              | 134,0                 | 204-01-150-1400    |
| 1500 | 480             | 1563            | 18264     | 315        | 20                 | 148                           | 25                 | 139                             | 1620,0              | 143,0                 | 204-01-148-1500    |
| 1600 | 480             | 1663            | 20737     | 315        | 20                 | 152                           | 24                 | 148                             | 1950,0              | 152,0                 | 204-01-152-1600    |
| 1700 | 480             | 1763            | 23368     | 315        | 20                 | 148                           | 22                 | 157                             | 2330,0              | 161,0                 | 204-01-148-1700    |
| 1800 | 480             | 1863            | 26156     | 315        | 20                 | 149                           | 21                 | 166                             | 2750,0              | 170,0                 | 204-01-149-1800    |
| 1900 | 480             | 1963            | 29101     | 315        | 20                 | 150                           | 20                 | 174                             | 3230,0              | 179,0                 | 204-01-150-1900    |
| 2000 | 480             | 2063            | 32204     | 315        | 20                 | 150                           | 19                 | 183                             | 3750,0              | 189,0                 | 204-01-150-2000    |
| 2100 | 480             | 2163            | 35463     | 315        | 20                 | 149                           | 18                 | 192                             | 4320,0              | 198,0                 | 204-01-149-2100    |
| 2200 | 480             | 2263            | 38879     | 315        | 20                 | 147                           | 17                 | 201                             | 4960,0              | 206,0                 | 204-01-147-2200    |

\*WF = wirksame Fläche / effective area

\*\*I = Mittenabstand / center distance

Weitere Abmessungen und Werkstoffe auf Anfrage. /

Other dimensions and materials on request.