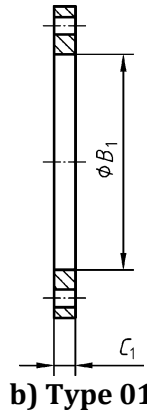
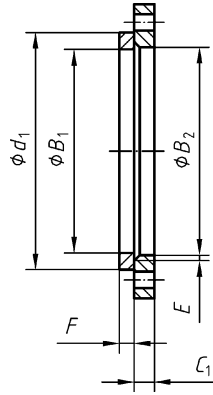


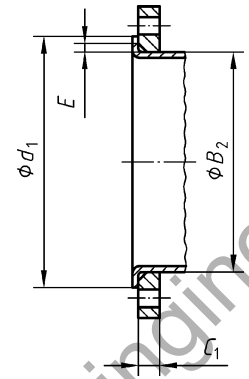
This diagram illustrates the arrangement but not necessarily the correct number of bolt holes. Refer to the column "Bolting Number" in Table 12 for the actual number.



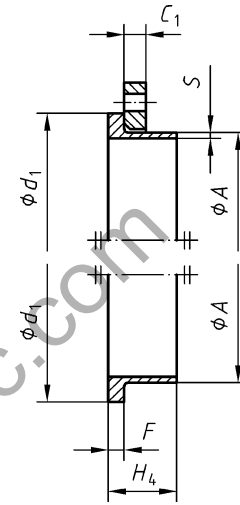
b) Type 01



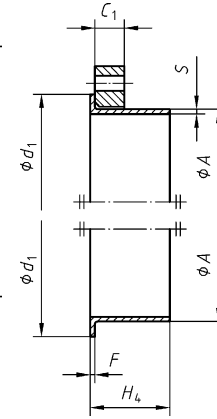
c) Type 02 and 32



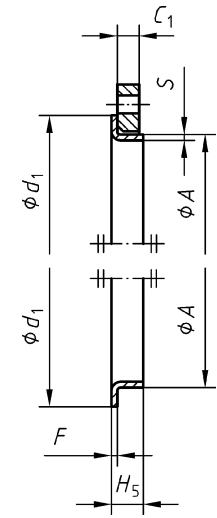
d) Type 02 and 33



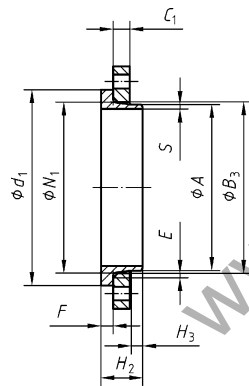
e) Type 02 and 35



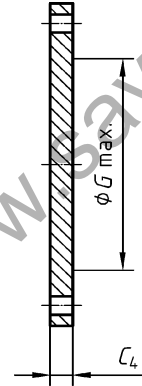
f) Type 02 and 36



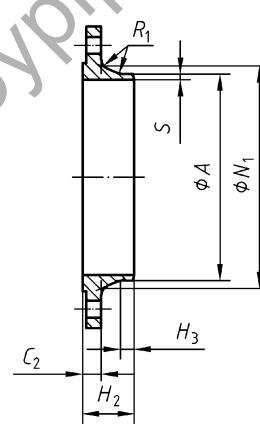
g) Type 02 and 37



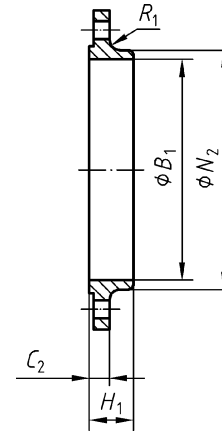
h) Type 04 and 34



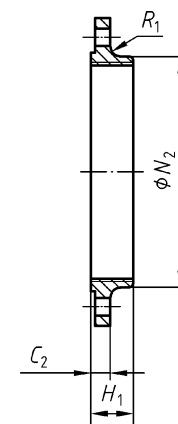
i) Type 05



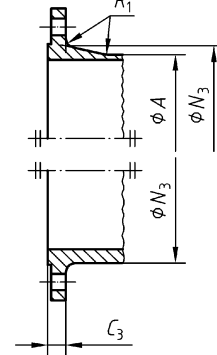
j) Type 11



k) Type 12



l) Type 13



m) Type 21

- NOTE 1 Dimensions  $N_1$ ,  $N_2$  and  $N_3$  are measured at the intersection of the hub draft angle and the back face of the flange.  
 NOTE 2 For dimension  $d_1$ , see Table 8.  
 NOTE 3 For dimensions  $G_{max}$  refer to NOTE 1 of 5.6.1.  
 NOTE 4 Type 33; lapped pipe end without determination of thickness and height.

Figure 7 — Dimensions of PN 10 flanges

Table 12 — Dimensions of PN 10 flanges

Dimensions in millimetres

| DN                             | Mating dimensions  |                           |                         |                |   | Outside diameter of neck A | Bore diameters |                |                | Flange thickness |                |                |                | Chamfer E | Collar thickness F |                  |                | Centre portion G <sub>max</sub> | Length         |                       |                       |                |                | Neck diameters |                       |          | Corner radii R <sub>1</sub> | Wall thickness (see 5.6.1) S |    |                    |
|--------------------------------|--------------------|---------------------------|-------------------------|----------------|---|----------------------------|----------------|----------------|----------------|------------------|----------------|----------------|----------------|-----------|--------------------|------------------|----------------|---------------------------------|----------------|-----------------------|-----------------------|----------------|----------------|----------------|-----------------------|----------|-----------------------------|------------------------------|----|--------------------|
|                                | Outside diameter D | Diameter of bolt circle K | Diameter of bolt hole L | Bolting        |   |                            | B <sub>1</sub> | B <sub>2</sub> | B <sub>3</sub> | C <sub>1</sub>   | C <sub>2</sub> | C <sub>3</sub> | C <sub>4</sub> |           | F                  | G <sub>max</sub> | H <sub>1</sub> |                                 | H <sub>2</sub> | H <sub>3</sub>        | H <sub>4</sub>        | H <sub>5</sub> | N <sub>1</sub> | N <sub>2</sub> | N <sub>3</sub>        |          |                             |                              |    |                    |
|                                |                    |                           |                         | Number         | Size  |                            |                |                |                |                  |                |                |                |           |                    |                  |                |                                 |                |                       |                       |                |                |                |                       |          |                             |                              |    |                    |
| Flange type                    |                    |                           |                         |                |   |                            |                |                |                |                  |                |                |                |           |                    |                  |                |                                 |                |                       |                       |                |                |                |                       |          |                             |                              |    |                    |
| 01, 02, 04, 05, 11, 12, 13, 21 |                    |                           |                         |                | 11<br>21 <sup>a</sup><br>34 <sup>c</sup><br>35 - 37 | 01<br>12<br>32             | 02             | 04             | 01<br>02<br>04 | 11<br>12<br>13   | 21             | 05             | 02<br>04       | 32<br>34  | 35                 | 36               | 37             | 05                              | 12<br>13       | 11<br>34 <sup>c</sup> | 11<br>34 <sup>c</sup> | 35             | 36             | 37             | 11<br>34 <sup>c</sup> | 12<br>13 | 21                          | 11<br>12<br>13<br>21, 34     | 34 | 11, 35<br>to<br>37 |
| 10                             | 90                 | 60                        | 14                      | 4              | M12   | 17,2                       | 18,0           | 21             | 31             | 14               | 16             | 16             | 16             | 3         | 12                 | 5                | 2              | 2,5                             | —              | 22                    | 35                    | 6              | 35             | 35             | 7                     | 28       | 30                          | 28                           | 4  | 1,8                |
| 15                             | 95                 | 65                        | 14                      | 4              | M12   | 21,3                       | 22,0           | 25             | 35             | 14               | 16             | 16             | 16             | 3         | 12                 | 5                | 2              | 2,5                             | —              | 22                    | 38                    | 6              | 38             | 38             | 7                     | 32       | 35                          | 32                           | 4  | 2,0                |
| 20                             | 105                | 75                        | 14                      | 4              | M12   | 26,9                       | 27,5           | 31             | 42             | 16               | 18             | 18             | 18             | 4         | 14                 | 6                | 2,5            | 3                               | —              | 26                    | 40                    | 6              | 40             | 40             | 8                     | 40       | 45                          | 40                           | 4  | 2,3                |
| 25                             | 115                | 85                        | 14                      | 4              | M12   | 33,7                       | 34,5           | 38             | 49             | 16               | 18             | 18             | 18             | 4         | 14                 | 7                | 2,5            | 3                               | —              | 28                    | 40                    | 6              | 40             | 40             | 10                    | 46       | 52                          | 50                           | 4  | 2,6                |
| 32                             | 140                | 100                       | 18                      | 4              | M16   | 42,4                       | 43,5           | 47             | 59             | 18               | 18             | 18             | 18             | 5         | 14                 | 8                | 3              | 3                               | —              | 30                    | 42                    | 6              | 42             | 42             | 12                    | 56       | 60                          | 60                           | 6  | 2,6                |
| 40                             | 150                | 110                       | 18                      | 4              | M16   | 48,3                       | 49,5           | 53             | 67             | 18               | 18             | 18             | 18             | 5         | 14                 | 8                | 3              | 3                               | —              | 32                    | 45                    | 7              | 45             | 45             | 15                    | 64       | 70                          | 70                           | 6  | 2,6                |
| 50                             | 165                | 125                       | 18                      | 4              | M16   | 60,3                       | 61,5           | 65             | 77             | 20               | 18             | 18             | 18             | 5         | 16                 | 8                | 3              | 3                               | —              | 28                    | 45                    | 8              | 45             | 45             | 20                    | 74       | 84                          | 84                           | 6  | 2,9                |
| 65                             | 185                | 145                       | 18                      | 8 <sup>d</sup> | M16   | 76,1                       | 77,5           | 81             | 96             | 20               | 18             | 18             | 18             | 6         | 16                 | 8                | 3              | 3                               | 55             | 32                    | 45                    | 10             | 45             | 45             | 20                    | 92       | 104                         | 104                          | 6  | 2,9                |
| 80                             | 200                | 160                       | 18                      | 8              | M16   | 88,9                       | 90,5           | 94             | 108            | 20               | 20             | 20             | 20             | 6         | 16                 | 10               | 3              | 3                               | 70             | 34                    | 50                    | 10             | 50             | 50             | 25                    | 105      | 118                         | 120                          | 6  | 3,2                |
| 100                            | 220                | 180                       | 18                      | 8              | M16   | 114,3                      | 116,0          | 120            | 134            | 22               | 20             | 20             | 20             | 6         | 18                 | 10               | 4              | 4                               | 90             | 40                    | 52                    | 12             | 52             | 52             | 25                    | 131      | 140                         | 140                          | 8  | 3,6                |
| 125                            | 250                | 210                       | 18                      | 8              | M16   | 139,7                      | 141,5          | 145            | 162            | 22               | 22             | 22             | 22             | 6         | 18                 | 10               | 4              | 4                               | 115            | 44                    | 55                    | 12             | 55             | 55             | 25                    | 156      | 168                         | 170                          | 8  | 4,0                |
| 150                            | 285                | 240                       | 22                      | 8              | M20   | 168,3                      | 170,5          | 174            | 188            | 24               | 22             | 22             | 22             | 6         | 20                 | 10               | 5              | 4                               | 140            | 44                    | 55                    | 12             | 55             | 55             | 25                    | 184      | 195                         | 190                          | 10 | 4,5                |
| 200                            | 340                | 295                       | 22                      | 8              | M20   | 219,1                      | 221,5          | 226            | 240            | 24               | 24             | 24             | 24             | 6         | 20                 | 11               | 5              | 5                               | 190            | 44                    | 62                    | 16             | 62             | 62             | 30                    | 234      | 246                         | 246                          | 10 | 6,3                |
| 250                            | 395                | 350                       | 22                      | 12             | M20   | 273,0                      | 276,5          | 281            | 294            | 26               | 26             | 26             | 26             | 8         | 22                 | 12               | 8              | —                               | 235            | 46                    | 68                    | 16             | 68             | 68             | —                     | 292      | 298                         | 298                          | 12 | 6,3                |
| 300                            | 445                | 400                       | 22                      | 12             | M20   | 323,9                      | 327,5          | 333            | 348            | 26               | 26             | 26             | 26             | 8         | 22                 | 12               | 8              | —                               | 285            | 46                    | 68                    | 16             | 68             | 68             | —                     | 342      | 350                         | 348                          | 12 | 7,1                |
| 350                            | 505                | 460                       | 22                      | 16             | M20   | 355,6                      | 359,5          | 365            | 400            | 30               | 26             | 26             | 26             | 8         | 22                 | 13               | 8              | —                               | 330            | 53                    | 68                    | 16             | 68             | 68             | —                     | 385      | 400                         | 408                          | 12 | 7,1                |
| 400                            | 565                | 515                       | 26                      | 16             | M24   | 406,4                      | 411,0          | 416            | 450            | 32               | 26             | 26             | 26             | 8         | 24                 | 14               | 8              | —                               | 380            | 57                    | 72                    | 16             | 72             | 72             | —                     | 440      | 456                         | 456                          | 12 | 7,1                |
| 450                            | 615                | 565                       | 26                      | 20             | M24   | 457,0                      | 462,0          | 467            | 498            | 36               | 28             | 28             | 28             | 8         | 24                 | 15               | —              | —                               | 425            | 63                    | 72                    | 16             | 72             | —              | —                     | 488      | 502                         | 502                          | 12 | 7,1                |
| 500                            | 670                | 620                       | 26                      | 20             | M24   | 508,0                      | 513,5          | 519            | 550            | 38               | 28             | 28             | 28             | 8         | 26                 | 16               | —              | —                               | 475            | 67                    | 75                    | 16             | 75             | —              | —                     | 542      | 559                         | 559                          | 12 | 7,1                |

See Annex A

| DN                             | Mating dimensions  |                           |                         |         |      | Outside diameter of neck A                          | Bore diameters |                |                | Flange thickness |                |                |                | Chamfer E | Collar thickness F |                  |                | Centre portion G <sub>max</sub> | Length         |                |                       |                       |                | Neck diameters |                |                       | Corner radii R <sub>1</sub> | Wall thickness (see 5.6.1) S |                          |     |                    |
|--------------------------------|--------------------|---------------------------|-------------------------|---------|------|---|----------------|----------------|----------------|------------------|----------------|----------------|----------------|-----------|--------------------|------------------|----------------|---------------------------------|----------------|----------------|-----------------------|-----------------------|----------------|----------------|----------------|-----------------------|-----------------------------|------------------------------|--------------------------|-----|--------------------|
|                                | Outside diameter D | Diameter of bolt circle K | Diameter of bolt hole L | Bolting |      |   | B <sub>1</sub> | B <sub>2</sub> | B <sub>3</sub> | C <sub>1</sub>   | C <sub>2</sub> | C <sub>3</sub> | C <sub>4</sub> |           | F                  | G <sub>max</sub> | H <sub>1</sub> |                                 | H <sub>2</sub> | H <sub>3</sub> | H <sub>4</sub>        | H <sub>5</sub>        | N <sub>1</sub> | N <sub>2</sub> | N <sub>3</sub> |                       |                             |                              |                          |     |                    |
|                                |                    |                           |                         | Number  | Size |   |                |                |                |                  |                |                |                |           |                    |                  |                |                                 |                |                |                       |                       |                |                |                |                       |                             |                              |                          |     |                    |
| Flange type                    |                    |                           |                         |         |      |   |                |                |                |                  |                |                |                |           |                    |                  |                |                                 |                |                |                       |                       |                |                |                |                       |                             |                              |                          |     |                    |
| 01, 02, 04, 05, 11, 12, 13, 21 |                    |                           |                         |         |      | 11<br>21 <sup>a</sup><br>34 <sup>c</sup><br>35 - 37 | 01<br>12<br>32 | 02             | 04             | 01<br>02<br>04   | 11<br>12<br>13 | 21             | 05             | 02<br>04  | 32<br>34           | 35               | 36             | 37                              | 05             | 12<br>13       | 11<br>34 <sup>c</sup> | 11<br>34 <sup>c</sup> | 35             | 36             | 37             | 11<br>34 <sup>c</sup> | 12<br>13                    | 21                           | 11<br>12<br>13<br>21, 34 | 34  | 11, 35<br>to<br>37 |
| 600                            | 780                | 725                       | 30                      | 20      | M27  | 610,0   | 616,5          | 622            | 650            | 42               | 30             | 34             | 34             | 8         | 26                 | 18               | —              | —                               | 575            | 75             | 82                    | 18                    | 80             | —              | —              | 642                   | 658                         | 658                          | 12                       | 8,0 | See Annex A        |
| 700                            | 895                | 840                       | 30                      | 24      | M27  | 711,0   | b              | 721            | —              | 50               | 35             | b              | 38             | 8         | —                  | 20               | —              | —                               | 670            | —              | 85                    | 18                    | 80             | —              | —              | 746                   | —                           | 772                          | 12                       | —   |                    |
| 800                            | 1 015              | 950                       | 33                      | 24      | M30  | 813,0   |                | 824            | —              | 56               | 38             |                | 48             | 8         | —                  | 20               | —              | —                               | 770            | —              | 96                    | 18                    | 90             | —              | —              | 850                   | —                           | 876                          | 12                       | —   |                    |
| 900                            | 1 115              | 1 050                     | 33                      | 28      | M30  | 914,0   |                | 926            | —              | 62               | 38             |                | 50             | 8         | —                  | 22               | —              | —                               | 860            | —              | 99                    | 20                    | 95             | —              | —              | 950                   | —                           | 976                          | 12                       | —   |                    |
| 1 000                          | 1 230              | 1 160                     | 36                      | 28      | M33  | 1 016,0   |                | 1 028          | —              | 70               | 44             |                | 54             | 8         | —                  | 24               | —              | —                               | 960            | —              | 105                   | 20                    | 95             | —              | —              | 1 052                 | —                           | 1 080                        | 16                       | —   |                    |
| 1 200                          | 1 455              | 1 380                     | 39                      | 32      | M36  | 1 219,0   |                | 1 234          | —              | 83               | 55             |                | 66             | 8         | —                  | 26               | —              | —                               | 1 160          | —              | 132                   | 25                    | 115            | —              | —              | 1 256                 | —                           | 1 292                        | 16                       | —   |                    |
| 1 400                          | 1 675              | 1 590                     | 42                      | 36      | M39  | 1 422,0   | —              | —              | —              | b                | 65             | —              | —              | —         | —                  | —                | —              | —                               | 143            | 25             | —                     | —                     | —              | 1 460          | —              | 1 496                 | 16                          | —                            |                          |     |                    |
| 1 600                          | 1 915              | 1 820                     | 48                      | 40      | M45  | 1 626,0   | —              | —              | —              |                  | 75             | —              | —              | —         | —                  | —                | —              | —                               | —              | 159            | 25                    | —                     | —              | —              | 1 666          | —                     | 1 712                       | 16                           | —                        |     |                    |
| 1 800                          | 2 115              | 2 020                     | 48                      | 44      | M45  | 1 829,0   | —              | —              | —              |                  | 85             | —              | —              | —         | —                  | —                | —              | —                               | —              | 175            | 30                    | —                     | —              | —              | 1 868          | —                     | 1 910                       | 16                           | —                        |     |                    |
| 2 000                          | 2 325              | 2 230                     | 48                      | 48      | M45  | 2 032,0   | —              | —              | —              |                  | 90             | —              | —              | —         | —                  | —                | —              | —                               | —              | 186            | 30                    | —                     | —              | —              | 2 072          | —                     | 2 120                       | 16                           | —                        |     |                    |
| 2 200                          | 2 550              | 2 440                     | 56                      | 52      | M52  | 2 235,0   | —              | —              | —              |                  | 100            | —              | —              | —         | —                  | —                | —              | —                               | —              | 202            | 35                    | —                     | —              | —              | 2 275          | —                     | —                           | 18                           | —                        |     |                    |
| 2 400                          | 2 760              | 2 650                     | 56                      | 56      | M52  | 2 438,0   | —              | —              | —              |                  | 110            | —              | —              | —         | —                  | —                | —              | —                               | —              | 218            | 35                    | —                     | —              | —              | 2 478          | —                     | —                           | 18                           | —                        |     |                    |
| 2 600                          | 2 960              | 2 850                     | 56                      | 60      | M52  | 2 620,0   | —              | —              | —              |                  | 110            | —              | —              | —         | —                  | —                | —              | —                               | —              | 224            | 40                    | —                     | —              | —              | 2 680          | —                     | —                           | 18                           | —                        |     |                    |
| 2 800                          | 3 180              | 3 070                     | 56                      | 64      | M52  | 2 820,0   | —              | —              | —              |                  | 124            | —              | —              | —         | —                  | —                | —              | —                               | —              | 244            | 40                    | —                     | —              | —              | 2 882          | —                     | —                           | 18                           | —                        |     |                    |
| 3 000                          | 3 405              | 3 290                     | 62                      | 68      | M56  | 3 020,0   | —              | —              | —              |                  | 132            | —              | —              | —         | —                  | —                | —              | —                               | —              | 257            | 45                    | —                     | —              | —              | 3 085          | —                     | —                           | 18                           | —                        |     |                    |

<sup>a</sup> For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter and the nominal value dimensions A, N3 and R1 and their tolerances are included for guidance only.

<sup>b</sup> To be specified by the purchaser.

<sup>c</sup> Use is limited up to DN 600.

<sup>d</sup> According to EN 1092-2 (Cast iron flanges) and EN 1092-3 (Copper alloy flanges), the flanges in this DN and PN may be supplied with 4 holes. Where steel flanges are required with 4 holes, these may be supplied by agreement between flange manufacturer and purchaser.