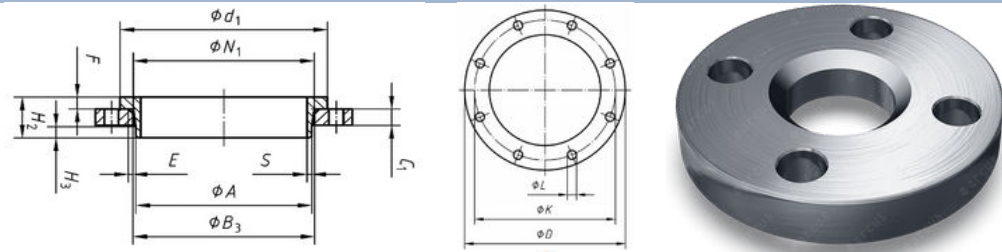


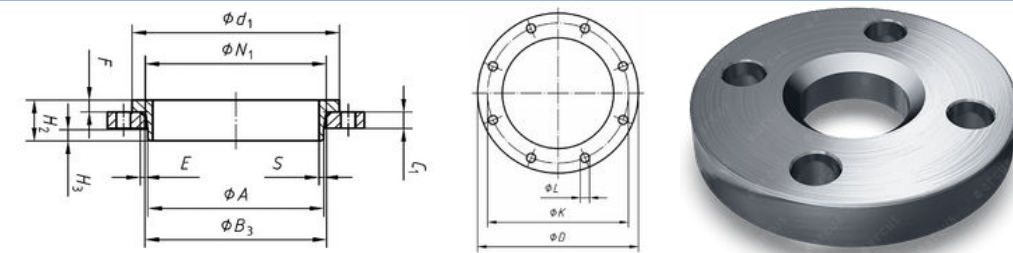
| PIPE | FLANGE DATA       |                  | BORE DIAMETER | CHAMFER | DRILLING DATA |                 |                    | WEIGHT |
|------|-------------------|------------------|---------------|---------|---------------|-----------------|--------------------|--------|
|      | Nominal pipe size | Outside diameter |               |         | Thickness     | Number of holes | Bolt hole diameter |        |
| DN   | D                 | C1               | B2            | E       | I             |                 | K                  |        |
| 10   | 90.0              | 14.0             | 31.0          | 3.0     | 4             | 14.0            | 60.0               | 0.6    |
| 15   | 95.0              | 14.0             | 35.0          | 3.0     | 4             | 14.0            | 65.0               | 0.7    |
| 20   | 105.0             | 16.0             | 42.0          | 4.0     | 4             | 14.0            | 75.0               | 0.9    |
| 25   | 115.0             | 16.0             | 59.0          | 4.0     | 4             | 14.0            | 85.0               | 1.1    |
| 32   | 140.0             | 18.0             | 67.0          | 5.0     | 4             | 18.0            | 100.0              | 1.8    |
| 40   | 150.0             | 18.0             | 59.0          | 5.0     | 4             | 18.0            | 110.0              | 2.0    |
| 50   | 165.0             | 20.0             | 77.0          | 5.0     | 4             | 18.0            | 125.0              | 2.5    |
| 65   | 185.0             | 20.0             | 96.0          | 6.0     | 4 or 8        | 18.0            | 145.0              | 3.1    |
| 80   | 200.0             | 20.0             | 108.0         | 6.0     | 8             | 18.0            | 160.0              | 3.5    |
| 100  | 220.0             | 22.0             | 134.0         | 6.0     | 8             | 18.0            | 180.0              | 4.2    |
| 125  | 250.0             | 22.0             | 162.0         | 6.0     | 8             | 18.0            | 210.0              | 5.2    |
| 150  | 285.0             | 24.0             | 188.0         | 6.0     | 8             | 22.0            | 240.0              | 6.9    |
| 200  | 340.0             | 24.0             | 240.0         | 6.0     | 8             | 22.0            | 295.0              | 8.9    |
| 250  | 395.0             | 26.0             | 294.0         | 8.0     | 12            | 22.0            | 350.0              | 11.2   |
| 300  | 445.0             | 26.0             | 348.0         | 8.0     | 12            | 22.0            | 400.0              | 12.8   |
| 350  | 505.0             | 30.0             | 400.0         | 8.0     | 16            | 22.0            | 460.0              | 19.4   |
| 400  | 565.0             | 32.0             | 450.0         | 8.0     | 16            | 26.0            | 515.0              | 26.4   |
| 450  | 615.0             | 36.0             | 498.0         | 8.0     | 20            | 26.0            | 565.0              | 32.2   |
| 500  | 670.0             | 38.0             | 550.0         | 8.0     | 20            | 26.0            | 620.0              | 38.5   |
| 600  | 780.0             | 42.0             | 650.0         | 8.0     | 20            | 30.0            | 725.0              | 52.2   |

- > Weights are approximate.
- > DN65 available with 4 or 8 bolt holes.
- > In combination with type 34 weld-neck collar.
- > DN10 - DN40 = PN40.
- > DN50 - DN150 = PN16.
- > The visual is an illustration. The amount of bolt holes depends on the size of the flange.



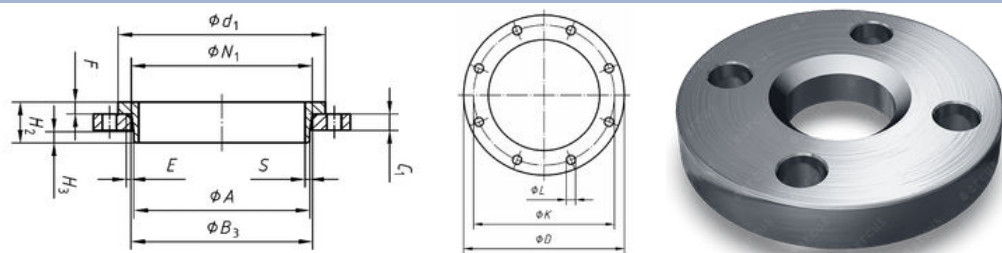
| PIPE              | FLANGE DATA      |           | BORE DIAMETER | CHAMFER | DRILLING DATA   |                    |                         | WEIGHT     |
|-------------------|------------------|-----------|---------------|---------|-----------------|--------------------|-------------------------|------------|
| Nominal pipe size | Outside diameter | Thickness |               |         | Number of holes | Bolt hole diameter | Diameter of bolt circle | Kg / piece |
| DN                | D                | C1        | B2            | E       | I               | K                  |                         |            |
| 10                | 90.0             | 14.0      | 21.0          | 3.0     | 4               | 14.0               | 60.0                    | 0.6        |
| 15                | 95.0             | 14.0      | 25.0          | 3.0     | 4               | 14.0               | 65.0                    | 0.7        |
| 20                | 105.0            | 16.0      | 31.0          | 4.0     | 4               | 14.0               | 75.0                    | 1.0        |
| 25                | 115.0            | 16.0      | 38.0          | 4.0     | 4               | 14.0               | 85.0                    | 1.1        |
| 32                | 140.0            | 18.0      | 47.0          | 5.0     | 4               | 18.0               | 100.0                   | 1.8        |
| 40                | 150.0            | 18.0      | 53.0          | 5.0     | 4               | 18.0               | 110.0                   | 2.0        |
| 50                | 165.0            | 20.0      | 65.0          | 5.0     | 4               | 18.0               | 125.0                   | 2.5        |
| 65                | 185.0            | 20.0      | 81.0          | 6.0     | 4 or 8          | 18.0               | 145.0                   | 3.1        |
| 80                | 200.0            | 20.0      | 94.0          | 6.0     | 8               | 18.0               | 160.0                   | 3.5        |
| 100               | 220.0            | 22.0      | 120.0         | 6.0     | 8               | 18.0               | 180.0                   | 4.2        |
| 125               | 250.0            | 22.0      | 145.0         | 6.0     | 8               | 18.0               | 210.0                   | 5.2        |
| 150               | 285.0            | 24.0      | 174.0         | 6.0     | 8               | 22.0               | 240.0                   | 6.9        |
| 200               | 340.0            | 26.0      | 226.0         | 6.0     | 12              | 22.0               | 295.0                   | 9.3        |
| 250               | 405.0            | 29.0      | 281.0         | 8.0     | 12              | 26.0               | 355.0                   | 13.5       |
| 300               | 460.0            | 32.0      | 333.0         | 8.0     | 12              | 26.0               | 410.0                   | 18.0       |
| 350               | 520.0            | 35.0      | 365.0         | 8.0     | 16              | 26.0               | 470.0                   | 27.0       |
| 400               | 580.0            | 38.0      | 416.0         | 8.0     | 16              | 30.0               | 525.0                   | 34.6       |
| 450               | 640.0            | 42.0      | 467.0         | 8.0     | 20              | 30.0               | 585.0                   | 44.6       |
| 500               | 715.0            | 46.0      | 519.0         | 8.0     | 20              | 33.0               | 650.0                   | 62.0       |
| 600               | 840.0            | 55.0      | 622.0         | 8.0     | 20              | 36.0               | 770.0                   | 98.8       |

- > Weights are approximate.
- > DN65 available with 4 or 8 bolt holes.
- > In combination with type 34 weld-neck collar.
- > DN10 - DN40 = PN40.
- > The visual is an illustration. The amount of bolt holes depends on the size of the flange.



| PIPE | FLANGE DATA       |                  | BORE DIAMETER | CHAMFER | DRILLING DATA |                 |                    | WEIGHT                  |
|------|-------------------|------------------|---------------|---------|---------------|-----------------|--------------------|-------------------------|
|      | Nominal pipe size | Outside diameter |               |         | Thickness     | Number of holes | Bolt hole diameter | Diameter of bolt circle |
| DN   | D                 | C1               | B2            | E       | I             |                 | K                  |                         |
| 10   | 90.0              | 14.0             | 21.0          | 3.0     | 4             | 14.0            | 60.0               | 0.6                     |
| 15   | 95.0              | 14.0             | 25.0          | 3.0     | 4             | 14.0            | 65.0               | 0.7                     |
| 20   | 105.0             | 16.0             | 31.0          | 4.0     | 4             | 14.0            | 75.0               | 0,9                     |
| 25   | 115.0             | 16.0             | 38.0          | 4.0     | 4             | 14.0            | 85.0               | 1.1                     |
| 32   | 140.0             | 18.0             | 47.0          | 5.0     | 4             | 18.0            | 100.0              | 1.8                     |
| 40   | 150.0             | 18.0             | 53.0          | 5.0     | 4             | 18.0            | 110.0              | 2.0                     |
| 50   | 165.0             | 20.0             | 65.0          | 5.0     | 4             | 18.0            | 125.0              | 2.7                     |
| 65   | 185.0             | 22.0             | 81.0          | 6.0     | 8             | 18.0            | 145.0              | 3.4                     |
| 80   | 200.0             | 24.0             | 94.0          | 6.0     | 8             | 18.0            | 160.0              | 4.2                     |
| 100  | 235.0             | 26.0             | 120.0         | 6.0     | 8             | 22.0            | 190.0              | 5.9                     |
| 125  | 270.0             | 28.0             | 145.0         | 6.0     | 8             | 26.0            | 220.0              | 8.0                     |
| 150  | 300.0             | 30.0             | 174.0         | 6.0     | 8             | 26.0            | 250.0              | 10.0                    |
| 200  | 360.0             | 32.0             | 226.0         | 6.0     | 12            | 26.0            | 310.0              | 13.8                    |
| 250  | 425.0             | 35.0             | 281.0         | 8.0     | 12            | 30.0            | 370.0              | 19.4                    |
| 300  | 485.0             | 38.0             | 333.0         | 8.0     | 16            | 30.0            | 430.0              | 25.5                    |
| 350  | 555.0             | 42.0             | 365.0         | 8.0     | 16            | 33.0            | 490.0              | 40.5                    |
| 400  | 620.0             | 48.0             | 416.0         | 8.0     | 16            | 36.0            | 550.0              | 56.1                    |
| 450  | 670.0             | 54.0             | 467.0         | 8.0     | 20            | 36.0            | 600.0              | 67.8                    |
| 500  | 730.0             | 58.0             | 519.0         | 8.0     | 20            | 36.0            | 660.0              | 84.6                    |
| 600  | 845.0             | 68.0             | 622.0         | 8.0     | 20            | 39.0            | 770.0              | 124.0                   |

- > Weights are approximate.
- > In combination with type 34 weld-neck collar.
- > DN10 - DN150 = PN40.
- > The visual is an illustration. The amount of bolt holes depends on the size of the flange.



| PIPE              | FLANGE DATA      |                              | BORE DIAMETER | CHAMFER | DRILLING DATA   |                    |                         | WEIGHT     |
|-------------------|------------------|------------------------------|---------------|---------|-----------------|--------------------|-------------------------|------------|
| Nominal pipe size | Outside diameter | Thickness                    |               |         | Number of holes | Bolt hole diameter | Diameter of bolt circle | Kg / piece |
| DN                | D                | C1                           | B2            | E       |                 |                    |                         |            |
| 10                | 90.0             | 14.0                         | 21.0          | 3.0     | 4               | 14.0               | 60.0                    | 0.6        |
| 15                | 95.0             | 14.0                         | 25.0          | 3.0     | 4               | 14.0               | 65.0                    | 0.7        |
| 20                | 105.0            | 16.0                         | 31.0          | 4.0     | 4               | 14.0               | 75.0                    | 1.0        |
| 25                | 115.0            | 16.0                         | 38.0          | 4.0     | 4               | 14.0               | 85.0                    | 1.1        |
| 32                | 140.0            | 18.0                         | 47.0          | 5.0     | 4               | 18.0               | 100.0                   | 1.8        |
| 40                | 150.0            | 18.0                         | 53.0          | 5.0     | 4               | 18.0               | 110.0                   | 2.0        |
| 50                | 165.0            | 20.0                         | 65.0          | 5.0     | 4               | 18.0               | 125.0                   | 2.7        |
| 65                | 185.0            | 22.0                         | 81.0          | 6.0     | 8               | 18.0               | 145.0                   | 3.4        |
| 80                | 200.0            | 24.0                         | 94.0          | 6.0     | 8               | 18.0               | 160.0                   | 4.2        |
| 100               | 235.0            | 26.0                         | 120.0         | 6.0     | 8               | 22.0               | 190.0                   | 5.9        |
| 125               | 270.0            | 28.0                         | 145.0         | 6.0     | 8               | 26.0               | 220.0                   | 8.0        |
| 150               | 300.0            | 30.0                         | 174.0         | 6.0     | 8               | 26.0               | 250.0                   | 10.0       |
| 200               | 375.0            | 36.0                         | 226.0         | 6.0     | 12              | 30.0               | 320.0                   | 17.4       |
| 250               | 450.0            | 42.0                         | 281.0         | 8.0     | 12              | 33.0               | 385.0                   | 28.4       |
| 300               | 515.0            | 52.0                         | 333.0         | 8.0     | 16              | 33.0               | 450.0                   | 43.6       |
| 350               | 580.0            | 58.0                         | 365.0         | 8.0     | 16              | 36.0               | 510.0                   | 64.9       |
| 400               | 660.0            | 65.0                         | 416.0         | 8.0     | 16              | 39.0               | 585.0                   | 95.1       |
| 450               | 685.0            | To be specified by purchaser | 467.0         | 8.0     | 20              | 39.0               | 610.0                   | -          |
| 500               | 755.0            |                              | 519.0         | 8.0     | 20              | 42.0               | 670.0                   | -          |
| 600               | 890.0            |                              | 622.0         | 8.0     | 20              | 48.0               | 795.0                   | -          |

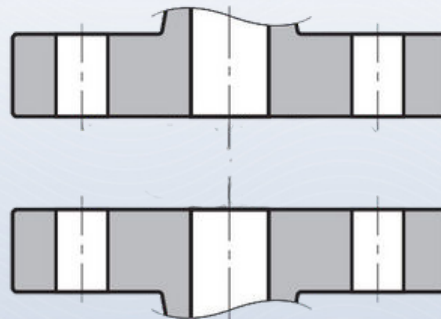
- > Weights are approximate.
- > In combination with type 34 weld-neck collar.
- > The visual is an illustration. The amount of bolt holes depends on the size of the flange.

# FLANGE FACING TYPES

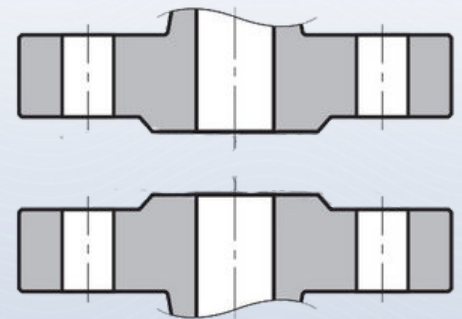
## EN 1092-1



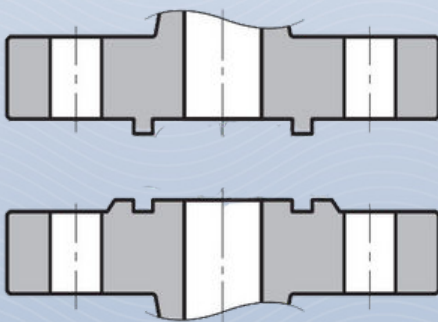
|        |               |
|--------|---------------|
| TYPE A | FLAT FACE     |
| TYPE B | RAISED FACE   |
| TYPE C | TONGUE        |
| TYPE D | GROOVE        |
| TYPE E | SPIGOT        |
| TYPE F | RECESS        |
| TYPE G | O-RING SPIGOT |
| TYPE H | O-RING GROOVE |



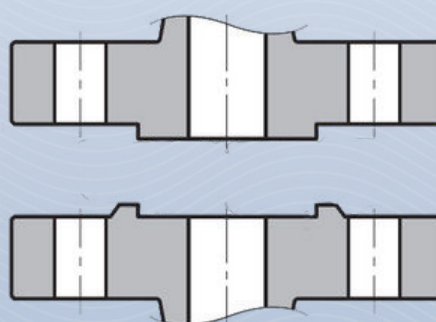
TYPE A - FLAT FACE



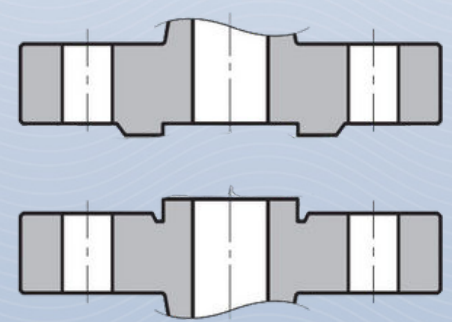
TYPE B - RAISED FACE



TYPE C AND D -  
TONGUE AND GROOVE FACE



TYPE E AND F -  
SPIGOT AND RECESS FACE



TYPE G AND H -  
O-RING SPIGOT  
AND  
O-RING GROOVE FACE

| FACING TYPES    | METHODE OF MACHINING | RADIUS OF TOOL NOSE MM | RA $\mu\text{m}$ |      | RZ $\mu\text{m}$ |      |
|-----------------|----------------------|------------------------|------------------|------|------------------|------|
|                 |                      | min.                   | min.             | max. | min.             | max. |
| A, B1 b, E, F   | Turning c            | 1.0                    | 3.2              | 12.5 | 12.5             | 50   |
| B2b, C, D, G, H | Turning c            | -                      | 0.8              | 3.2  | 3.2              | 12.5 |

For certain applications, e.g. low temperatures gases, it may be necessary to stipulate closer controle to the surface finish.

|    |  |
|----|--|
| A  | Ra and Rz are defined in EN ISO 4287   |
| B  | Types B1 and B2 are raised face (type B) flanges with different specified surface roughness values.                          |
| B1 | Standard facing for all PN numbers.  |
| B2 | Only if agreed between the purchser and the flange manufacturer.   |
| C  | The term "turning" includes any method of machine operation producing either serrated concentric or serrated spiral grooves. |