



AXIAL
RESTRAINT
PIPE COUPLINGS

CONNECT METAL PIPES WITH **STRAUB-METAL-GRIP** and **STRAUB-GRIP**

STRAUB-METAL-GRIP and STRAUB-GRIP pipe couplings are pipe connections with axial restraint for all metal pipes and rigid plastics.

There are countless possible uses on almost all pipe systems due to the universal connection solution. The installation is performed on smooth-ended pipes without any pipe end machining.

The compact design allows pipe routing in very confined spaces.

Unexpected secondary stresses and arising inaccuracies for the pipe routing on-site are accommodated by the couplings due to the flexible design. This enables simple and quick installation that results in noticeable cost savings.



STRAUB-METAL-GRIP

- Outside diameter: 30.0 up to 609.6 mm
- Temperature: -30°C up to +100°C
- Sealing sleeve: EPDM, NBR



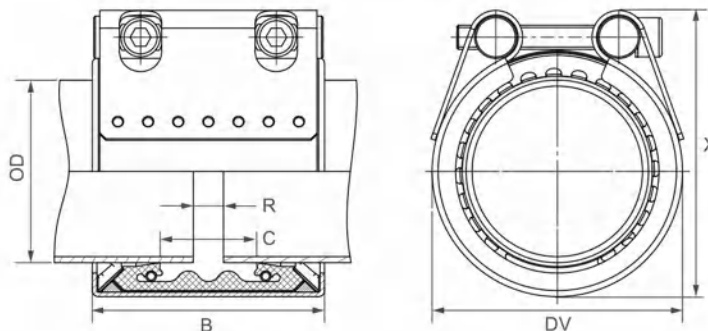
STRAUB-GRIP

- Outside diameter: 25.0 up to 711.2 mm
- Temperature: -20°C up to +180°C
- Sealing sleeve: EPDM, NBR, FPM/FKM



| Components / Materials | W1 | W2 | W4 | W5 |
|------------------------|----|------------------------------|------------------------------|------------------------------|
| Casing | | AISI 316 L | AISI 316 L | AISI 316 L or similar |
| Bolts | | AISI 4135 | A4 - 80 | A4 - 80 |
| Bars | | AISI 12L14, galvanised | AISI 304 | AISI 316 L or similar |
| Anchoring rings | | AISI 301 | AISI 301 | AISI 301 |
| Strip insert (option) | | AISI 316 L or similar / PVDF | AISI 316 L or similar / PVDF | AISI 316 L or similar / PVDF |

| | |
|----------------------------|--|
| Sealing sleeve EPDM | Temp.: -30°C up to +100°C |
| | Medium: all qualities of water, waste water, air, solids and chemical products |
| Sealing sleeve NBR | Temp.: -20°C up to +80°C |
| | Medium: water, gas, oil, fuel and other hydrocarbons |



| OD [mm] | Clamping range [mm] | PN [bar] | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|---------|---------------------|----------|----------|--------|--------|---------|--------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| 30.0 | 29.5 - 30.5 | 67.0 | 16.0 | 46/67 | 18 | 47 | 56 | 5 | 5 | 10 | 6 | 8 |
| 33.7 | 33.2 - 34.2 | 62.0 | 16.0 | 46/67 | 18 | 52 | 63 | 5 | 5 | 10 | 6 | 8 |
| 38.0 | 37.5 - 38.5 | 58.0 | 16.0 | 61 | 19 | 58 | 73 | 5 | 5 - 10 | 15 | 6 | 8 |
| 42.4 | 41.9 - 42.9 | 53.0 | 16.0 | 61 | 20 | 62 | 76 | 5 | 5 - 10 | 15 | 6 | 8 |
| 44.5 | 44.0 - 45.0 | 48.0 | 16.0 | 61 | 20 | 64 | 80 | 5 | 5 - 10 | 15 | 6 | 8 |
| 48.3 | 47.8 - 48.8 | 44.0 | 16.0 | 61 | 20 | 68 | 83 | 5 | 5 - 10 | 15 | 6 | 8 |
| 54.0 | 53.5 - 54.5 | 39.0 | 16.0 | 77 | 38 | 74 | 89 | 5 | 5 - 15 | 15 | 6 | 8 |
| 57.0 | 56.4 - 57.6 | 37.0 | 16.0 | 77 | 32 | 77 | 92 | 5 - 10 | 5 - 25 | 15 | 6 | 8 |
| 60.3 | 59.7 - 60.9 | 37.0 | 16.0 | 77 | 32 | 82 | 95 | 5 - 10 | 5 - 25 | 15 | 6 | 8 |
| 63.5 | 62.9 - 64.1 | 37.0 | 16.0 | 77 | 32 | 84 | 98 | 5 - 10 | 5 - 25 | 15 | 6 | 8 |
| 73.0 | 72.2 - 73.8 | 56.0 | 16.0 | 94 | 39 | 95 | 117 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 76.1 | 75.3 - 76.9 | 56.0 | 16.0 | 94 | 39 | 100 | 117 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 84.0 | 83.2 - 84.8 | 45.0 | 16.0 | 94 | 39 | 112 | 123 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 88.9 | 88.0 - 89.8 | 41.0 | 16.0 | 94 | 39 | 117 | 123 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 104.0 | 103.0 - 105.0 | 37.0 | 16.0 | 94 | 39 | 133 | 151 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 108.0 | 106.9 - 109.1 | 35.0 | 16.0 | 94 | 39 | 133 | 151 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 114.3 | 113.2 - 115.4 | 34.0 | 16.0 | 94 | 39 | 139 | 157 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 129.0 | 127.7 - 130.3 | 33.0 | 16.0 | 108 | 43 | 160 | 182 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 133.0 | 131.7 - 134.3 | 33.0 | 16.0 | 108 | 43 | 160 | 182 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 139.7 | 138.3 - 141.1 | 32.0 | 16.0 | 109 | 43 | 168 | 191 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 154.0 | 152.5 - 155.5 | 32.0 | 16.0 | 109 | 51 | 186 | 210 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 159.0 | 157.4 - 160.6 | 31.0 | 16.0 | 109 | 43 | 187 | 210 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 168.3 | 166.6 - 170.0 | 29.0 | 16.0 | 109 | 43 | 200 | 220 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 219.1 | 216.9 - 221.3 | 26.0 | 16.0 | 150 | 60 | 259 | 288 | 5 - 15 | 5 - 35 | 100 | 14 | 16 |

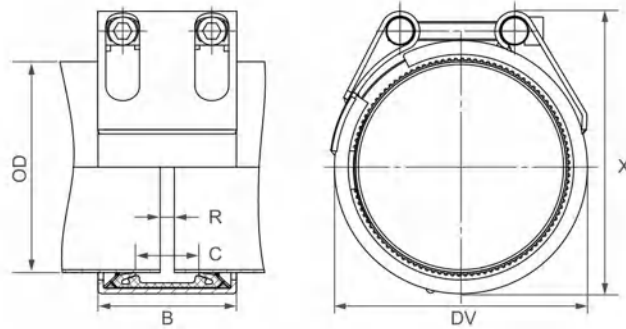
REFER TO MINIMUM WALL THICKNESS (see page 105)

Remarks:

- Follow fitting instructions
- PN () = working pressure considering the application loads
Test pressure = PN () x 1.5 (for example industry, water supply etc.)
PN () = nominal pressure, includes four times safety factor (e.g. shipbuilding)
- The pressure values are valid on radial rigid carbon steel pipes under static loads
- Strip inserts are optional accessories (see page 87)
- Additional sealing sleeves and temperature ranges on request



| Components / Materials | W1 | W2 | W4 | W5 |
|----------------------------|---|----|----|----|
| Casing | AISI A738, hot-dip galvanised | | | |
| Bolts | AISI 4135 | | | |
| Bars | AISI 12L14, galvanised | | | |
| Anchoring rings | AISI 301 | | | |
| Strip insert (option) | AISI 316 L or similar / PVDF | | | |
| Sealing sleeve EPDM | Temp.: -20°C up to +100°C Medium: all qualities of water, waste water, air, solids and chemical products | | | |
| Sealing sleeve NBR | Temp.: -20°C up to +80°C Medium: water, gas, oil, fuel and other hydrocarbons | | | |



| OD [mm] | Clamping range [mm] | PN [bar] | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|---------|---------------------|----------|----------|--------|--------|---------|--------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| 180.0 | 178.0 - 182.0 | 29.0 | 16.0 | 148 | 67 | 225 | 256 | 5 - 15 | 5 - 35 | 150 | 17 | 20 |
| 193.7 | 192.0 - 195.5 | 29.0 | 16.0 | 148 | 67 | 239 | 270 | 5 - 15 | 5 - 35 | 150 | 17 | 20 |
| 200.0 | 198.0 - 202.0 | 28.0 | 15.0 | 148 | 67 | 245 | 276 | 5 - 15 | 5 - 35 | 180 | 17 | 20 |
| 206.0 | 204.0 - 208.0 | 28.0 | 15.0 | 148 | 67 | 251 | 282 | 5 - 15 | 5 - 35 | 180 | 17 | 20 |
| 244.5 | 242.0 - 247.0 | 27.0 | 14.0 | 148 | 67 | 290 | 330 | 5 - 15 | 5 - 35 | 180 | 17 | 20 |
| 267.0 | 264.5 - 269.5 | 24.0 | 12.0 | 148 | 67 | 312 | 352 | 5 - 15 | 5 - 35 | 180 | 17 | 20 |
| 273.0 | 270.5 - 275.5 | 21.0 | 12.0 | 148 | 67 | 318 | 359 | 5 - 15 | 5 - 35 | 180 | 17 | 20 |
| 323.9 | 320.5 - 327.0 | 18.0 | 10.0 | 148 | 67 | 369 | 411 | 5 - 15 | 5 - 35 | 230 | 17 | 20 |
| 355.6 | 352.0 - 359.0 | 17.0 | 8.0 | 148 | 67 | 401 | 444 | 5 - 15 | 5 - 35 | 230 | 17 | 20 |
| 406.4 | 402.5 - 410.5 | 14.0 | 8.0 | 148 | 67 | 451 | 494 | 5 - 15 | 5 - 35 | 230 | 17 | 20 |
| 457.2 | 452.5 - 462.0 | 8.0 | 6.0 | 148 | 67 | 502 | 546 | 5 - 15 | 5 - 35 | 250 | 17 | 20 |
| 508.0 | 503.0 - 513.0 | 6.0 | 5.0 | 148 | 67 | 553 | 598 | 5 - 15 | 5 - 35 | 250 | 17 | 20 |
| 558.8 | 554.0 - 564.0 | 6.0 | 4.5 | 148 | 67 | 604 | 649 | 5 - 15 | 5 - 35 | 300 | 17 | 20 |
| 609.6 | 604.5 - 614.5 | 5.0 | 4.0 | 148 | 67 | 655 | 701 | 5 - 15 | 5 - 35 | 300 | 17 | 20 |

CONTINUOUSLY VARIABLE INTERMEDIATE SIZES FROM 180.0 TO 609.6 mm ARE AVAILABLE
REFER TO MINIMUM WALL THICKNESS (see page 105)

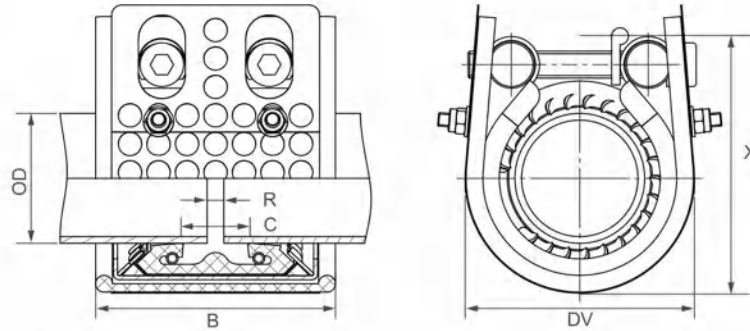
Remarks:

- Follow fitting instructions
- PN (factory) = working pressure considering the application loads
Test pressure = PN (factory) x 1.5 (for example industry, water supply etc.)
PN (ship) = nominal pressure, includes four times safety factor (e.g. shipbuilding)
- The pressure values are valid on radial rigid carbon steel pipes under static loads
- Strip inserts are optional accessories (see page 87)
- Additional sealing sleeves and temperature ranges on request



| Components / Materials | W1 | W2 | W4 | W5 |
|------------------------|----|------------------------------|------------------------------|------------------------------|
| Casing | | AISI 316 L | AISI 316 L | AISI 316 L or similar |
| Bolts | | AISI 4135 | A4 - 80 | A4 - 80 |
| Bars | | AISI 12L14, galvanised | AISI 304 | AISI 316 L or similar |
| Anchoring rings | | AISI 301 | AISI 301 | AISI 301 |
| Strip insert (option) | | AISI 316 L or similar / PVDF | AISI 316 L or similar / PVDF | AISI 316 L or similar / PVDF |

| | |
|----------------------------|---|
| Sealing sleeve EPDM | Temp.: -30°C up to +100°C Medium: all qualities of water, waste water, air, solids and chemical products |
| Sealing sleeve NBR | Temp.: -20°C up to +80°C Medium: water, gas, oil, fuel and other hydrocarbons |



| OD [mm] | Clamping range [mm] | PN [bar] | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|---------|---------------------|----------|----------|--------|--------|---------|--------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| 30.0 | 29.5 - 30.5 | 67.0 | 16.0 | 46/67 | 18 | 57 | 61 | 5 | 5 | 10 | 6 | 8 |
| 33.7 | 33.2 - 34.2 | 62.0 | 16.0 | 46/67 | 18 | 62 | 68 | 5 | 5 | 10 | 6 | 8 |
| 38.0 | 37.5 - 38.5 | 58.0 | 16.0 | 71 | 19 | 68 | 78 | 5 | 5 - 10 | 15 | 6 | 8 |
| 42.4 | 41.9 - 42.9 | 53.0 | 16.0 | 71 | 20 | 72 | 81 | 5 | 5 - 10 | 15 | 6 | 8 |
| 44.5 | 44.0 - 45.0 | 48.0 | 16.0 | 71 | 20 | 74 | 85 | 5 | 5 - 10 | 15 | 6 | 8 |
| 48.3 | 47.8 - 48.8 | 44.0 | 16.0 | 71 | 20 | 78 | 88 | 5 | 5 - 10 | 15 | 6 | 8 |
| 54.0 | 53.5 - 54.5 | 39.0 | 16.0 | 87 | 38 | 84 | 94 | 5 | 5 - 15 | 15 | 6 | 8 |
| 57.0 | 56.4 - 57.6 | 37.0 | 16.0 | 87 | 32 | 87 | 97 | 5 - 10 | 5 - 25 | 15 | 6 | 8 |
| 60.3 | 59.7 - 60.9 | 37.0 | 16.0 | 87 | 32 | 87 | 100 | 5 - 10 | 5 - 25 | 15 | 6 | 8 |
| 63.5 | 62.9 - 64.1 | 37.0 | 16.0 | 87 | 32 | 94 | 103 | 5 - 10 | 5 - 25 | 15 | 6 | 8 |
| 76.1 | 75.3 - 76.9 | 56.0 | 16.0 | 110 | 39 | 110 | 122 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 84.0 | 83.2 - 84.8 | 45.0 | 16.0 | 110 | 39 | 122 | 128 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 88.9 | 88.0 - 89.8 | 41.0 | 16.0 | 110 | 39 | 127 | 128 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 104.0 | 103.0 - 105.0 | 37.0 | 16.0 | 110 | 39 | 143 | 156 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 108.0 | 106.9 - 109.1 | 35.0 | 16.0 | 110 | 39 | 143 | 156 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 114.3 | 113.2 - 115.4 | 34.0 | 16.0 | 110 | 39 | 149 | 162 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 129.0 | 127.7 - 130.3 | 33.0 | 16.0 | 124 | 43 | 170 | 187 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 133.0 | 131.7 - 134.3 | 33.0 | 16.0 | 125 | 43 | 170 | 187 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 139.7 | 138.3 - 141.1 | 32.0 | 16.0 | 125 | 43 | 178 | 196 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 154.0 | 152.5 - 155.5 | 32.0 | 16.0 | 125 | 51 | 196 | 215 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 159.0 | 157.4 - 160.6 | 31.0 | 16.0 | 125 | 43 | 197 | 215 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 168.3 | 166.6 - 170.0 | 29.0 | 16.0 | 125 | 43 | 210 | 225 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 219.1 | 216.9 - 221.3 | 26.0 | 16.0 | 166 | 60 | 269 | 293 | 5 - 15 | 5 - 35 | 100 | 14 | 16 |

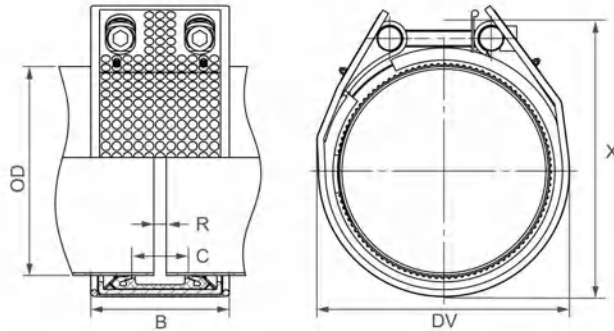
REFER TO MINIMUM WALL THICKNESS (see page 105)

Remarks:

- Follow fitting instructions
- PN () = working pressure considering the application loads
Test pressure = PN () x 1.5 (for example industry, water supply etc.)
PN () = nominal pressure, includes four times safety factor (e.g. shipbuilding)
- The pressure values are valid on radial rigid carbon steel pipes under static loads
- Additional sealing sleeves and temperature ranges on request



| Components / Materials | W1 | W2 | W4 | W5 |
|----------------------------|---|----|----|----|
| Casing | AISI A738, hot-dip galvanised | | | |
| Bolts | AISI 4135 | | | |
| Bars | AISI 12L14, galvanised | | | |
| Anchoring rings | AISI 301 | | | |
| Strip insert (option) | AISI 316 L or similar / PVDF | | | |
| Sealing sleeve EPDM | Temp.: -20°C up to +100°C Medium: all qualities of water, waste water, air, solids and chemical products | | | |
| Sealing sleeve NBR | Temp.: -20°C up to +80°C Medium: water, gas, oil, fuel and other hydrocarbons | | | |



| OD [mm] | Clamping range [mm] | PN [bar] | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|---------|---------------------|----------|----------|--------|--------|---------|--------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| 244.5 | 242.0 - 247.0 | 27.0 | 14.0 | 164 | 67 | 300 | 335 | 5 - 15 | 5 - 35 | 180 | 17 | 20 |
| 267.0 | 264.5 - 269.5 | 24.0 | 12.0 | 164 | 67 | 322 | 357 | 5 - 15 | 5 - 35 | 180 | 17 | 20 |
| 273.0 | 270.5 - 275.5 | 21.0 | 12.0 | 164 | 67 | 328 | 364 | 5 - 15 | 5 - 35 | 180 | 17 | 20 |
| 323.9 | 320.5 - 327.0 | 18.0 | 10.0 | 164 | 67 | 379 | 416 | 5 - 15 | 5 - 35 | 230 | 17 | 20 |
| 355.6 | 352.0 - 359.0 | 17.0 | 8.0 | 164 | 67 | 411 | 449 | 5 - 15 | 5 - 35 | 230 | 17 | 20 |
| 406.4 | 402.5 - 410.5 | 14.0 | 8.0 | 164 | 67 | 461 | 499 | 5 - 15 | 5 - 35 | 230 | 17 | 20 |
| 457.2 | 452.5 - 462.0 | 8.0 | 6.0 | 164 | 67 | 512 | 551 | 5 - 15 | 5 - 35 | 250 | 17 | 20 |

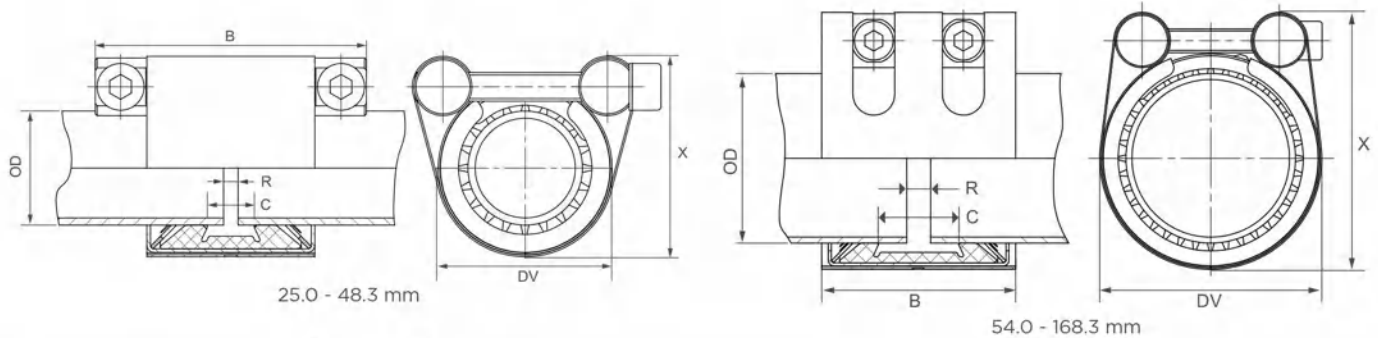
REFER TO MINIMUM WALL THICKNESS (see page 105)

Remarks:

- Follow fitting instructions
- PN (🏭) = working pressure considering the application loads
Test pressure = PN (🏭) x 1.5 (for example industry, water supply etc.)
PN (🚢) = nominal pressure, includes four times safety factor (e.g. shipbuilding)
- The pressure values are valid on radial rigid carbon steel pipes under static loads
- Strip inserts are optional accessories (see page 87)
- Additional sealing sleeves and temperature ranges on request



| Components / Materials | W1 | W2 | W4 | W5 |
|-------------------------------|---|----|----|-----------------------|
| Casing | | | | AISI 316 L or similar |
| Bolts | | | | A4 - 80 |
| Bars | | | | AISI 316 L or similar |
| Anchoring rings | | | | AISI 301 |
| Strip insert (option) | | | | AISI 316 L / PVDF |
| Sealing sleeve EPDM | Temp.: -20°C up to +100°C Medium: all qualities of water, waste water, air, solids and chemical products | | | |
| Sealing sleeve NBR | Temp.: -20°C up to +80°C Medium: water, gas, oil, fuel and other hydrocarbons | | | |
| Sealing sleeve FPM/FKM | Temp.: -20°C up to +180°C Medium: ozone, oxygen, acids, gas, oil and fuel (only with strip insert) | | | |



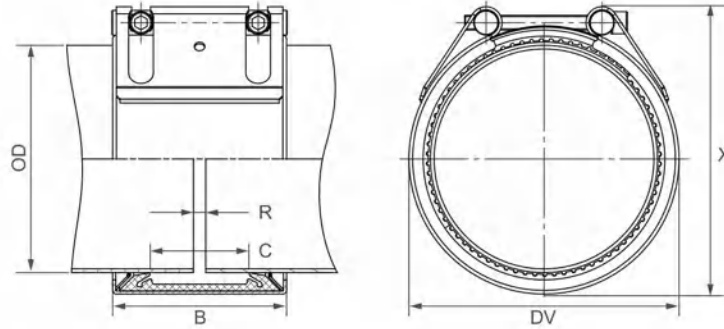
| OD [mm] | Clamping range [mm] | PN [bar] | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|---------|---------------------|----------|----------|-----------|--------|---------|--------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| 25.0 | 24.5 - 25.5 | 64.0 | 16.0 | 46.5 / 75 | 18 | 41 | 53 | 5 | 5 - 10 | 10 | 6 | 8 |
| 26.9 | 26.4 - 27.4 | 58.0 | 16.0 | 46.5 / 75 | 18 | 44 | 56 | 5 | 5 - 10 | 10 | 6 | 8 |
| 28.0 | 27.5 - 28.5 | 50.0 | 16.0 | 46.5 / 75 | 18 | 45 | 57 | 5 | 5 - 10 | 10 | 6 | 8 |
| 30.0 | 29.5 - 30.5 | 42.0 | 16.0 | 46.5 / 75 | 18 | 47 | 60 | 5 | 5 - 10 | 10 | 6 | 8 |
| 33.7 | 33.2 - 34.2 | 39.0 | 16.0 | 46.5 / 75 | 18 | 51 | 65 | 5 | 5 - 10 | 10 | 6 | 8 |
| 35.0 | 34.5 - 35.5 | 37.0 | 16.0 | 46.5 / 75 | 18 | 52 | 66 | 5 | 5 - 10 | 12 | 6 | 8 |
| 38.0 | 37.5 - 38.5 | 36.0 | 16.0 | 46.5 / 75 | 18 | 55 | 69 | 5 | 5 - 10 | 12 | 6 | 8 |
| 40.0 | 39.5 - 40.5 | 35.0 | 16.0 | 46.5 / 75 | 18 | 57 | 71 | 5 | 5 - 10 | 12 | 6 | 8 |
| 42.4 | 41.9 - 42.9 | 33.0 | 16.0 | 46.5 / 75 | 18 | 60 | 74 | 5 | 5 - 10 | 12 | 6 | 8 |
| 44.5 | 44.0 - 45.0 | 30.0 | 16.0 | 46.5 / 75 | 18 | 62 | 76 | 5 | 5 - 10 | 12 | 6 | 8 |
| 48.3 | 47.8 - 48.8 | 28.0 | 16.0 | 46.5 / 75 | 18 | 65 | 81 | 5 | 5 - 10 | 12 | 6 | 8 |
| 54.0 | 53.5 - 54.5 | 24.0 | 16.0 | 65 | 24 | 71 | 87 | 5 | 5 - 15 | 15 | 6 | 8 |
| 57.0 | 56.4 - 57.6 | 23.0 | 16.0 | 65 | 24 | 74 | 90 | 5 | 5 - 15 | 15 | 6 | 8 |
| 60.3 | 59.7 - 60.9 | 23.0 | 16.0 | 65 | 24 | 77 | 93 | 5 | 5 - 15 | 15 | 6 | 8 |
| 63.0 | 62.4 - 63.6 | 23.0 | 16.0 | 65 | 24 | 80 | 96 | 5 | 5 - 15 | 15 | 6 | 8 |
| 66.6 | 64.9 - 67.3 | 22.0 | 16.0 | 65 | 24 | 84 | 100 | 5 | 5 - 15 | 15 | 6 | 8 |
| 70.0 | 68.9 - 70.7 | 22.0 | 16.0 | 65 | 24 | 87 | 104 | 5 | 5 - 15 | 15 | 6 | 8 |
| 73.0 | 72.3 - 73.7 | 21.0 | 16.0 | 65 | 24 | 90 | 107 | 5 | 5 - 15 | 15 | 6 | 8 |
| 76.1 | 75.3 - 76.9 | 35.0 | 16.0 | 100 | 40 | 100 | 122 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 79.5 | 78.7 - 80.3 | 32.0 | 16.0 | 100 | 40 | 103 | 125 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 84.0 | 83.2 - 84.8 | 29.0 | 16.0 | 100 | 40 | 107 | 130 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 88.9 | 88.0 - 89.8 | 26.0 | 16.0 | 100 | 40 | 112 | 134 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 95.0 | 94.0 - 96.0 | 24.0 | 16.0 | 100 | 40 | 117 | 139 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 98.0 | 97.0 - 99.0 | 24.0 | 16.0 | 100 | 40 | 121 | 143 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 100.6 | 99.6 - 101.6 | 23.0 | 16.0 | 100 | 40 | 124 | 146 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 101.6 | 100.6 - 102.6 | 23.0 | 16.0 | 100 | 40 | 125 | 146 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 104.0 | 103.0 - 105.0 | 23.0 | 16.0 | 100 | 40 | 127 | 148 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 104.8 | 103.8 - 105.8 | 23.0 | 16.0 | 100 | 40 | 128 | 150 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 108.0 | 106.9 - 109.1 | 22.0 | 16.0 | 100 | 40 | 132 | 154 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 114.3 | 113.2 - 115.4 | 22.0 | 16.0 | 100 | 40 | 138 | 160 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 118.0 | 116.9 - 119.1 | 22.0 | 16.0 | 100 | 40 | 142 | 166 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 125.0 | 123.7 - 126.3 | 21.0 | 16.0 | 115 | 53 | 152 | 174 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 127.0 | 125.7 - 128.3 | 21.0 | 16.0 | 115 | 53 | 154 | 176 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 129.0 | 127.7 - 130.3 | 21.0 | 16.0 | 115 | 53 | 156 | 178 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 130.2 | 128.9 - 131.5 | 21.0 | 16.0 | 115 | 53 | 157 | 179 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 133.0 | 131.7 - 134.3 | 21.0 | 16.0 | 115 | 53 | 160 | 182 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 139.7 | 138.3 - 141.1 | 20.0 | 16.0 | 115 | 53 | 166 | 189 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 141.3 | 139.9 - 142.7 | 20.0 | 16.0 | 115 | 53 | 168 | 190 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 144.0 | 142.6 - 145.4 | 20.0 | 16.0 | 115 | 53 | 171 | 183 | 5 - 10 | 5 - 30 | 50 | 10 | 12 |
| 154.0 | 152.5 - 155.5 | 18.0 | 16.0 | 115 | 53 | 181 | 203 | 5 - 10 | 5 - 30 | 50 | 10 | 12 |
| 159.0 | 157.4 - 160.6 | 18.0 | 16.0 | 115 | 53 | 186 | 208 | 5 - 10 | 5 - 30 | 50 | 10 | 12 |
| 165.0 | 163.4 - 166.6 | 16.0 | 16.0 | 115 | 53 | 192 | 214 | 5 - 10 | 5 - 30 | 50 | 10 | 12 |
| 168.3 | 166.6 - 170.0 | 16.0 | 16.0 | 115 | 53 | 195 | 217 | 5 - 10 | 5 - 30 | 50 | 10 | 12 |

REFER TO MINIMUM WALL THICKNESS (see page 105)

- Follow fitting instructions
- According to DIN 86128
- PN () = working pressure considering the application loads
Test pressure = PN () x 1.5 (for example industry, water supply etc.)
- PN () = nominal pressure, includes four times safety factor (e.g. shipbuilding)
- The pressure values are valid on radial rigid carbon steel pipes under static loads
- Strip inserts are optional accessories (see page 87)
- Additional sealing sleeves and temperature ranges on request

| Components / Materials | W1 | W2 | W4 | W5 |
|------------------------|----|------------------------------|----|------------------------------|
| Casing | | AISI 316 L or similar | | AISI 316 L or similar |
| Bolts | | AISI 4135 | | A4 - 80 |
| Bars | | AISI 12L14, galvanised | | AISI 316 L |
| Anchoring rings | | AISI 301 | | AISI 301 |
| Strip insert (option) | | AISI 316 L or similar / HDPE | | AISI 316 L or similar / HDPE |

| | |
|-------------------------------|---|
| Sealing sleeve EPDM | Temp.: -20°C up to +100°C Medium: all qualities of water, waste water, air, solids and chemical products |
| Sealing sleeve NBR | Temp.: -20°C up to +80°C Medium: water, gas, oil, fuel and other hydrocarbons |
| Sealing sleeve FPM/FKM | Temp.: -20°C up to +180°C Medium: ozone, oxygen, acids, gas, oil and fuel (only with strip insert) |



| OD [mm] | Clamping range [mm] | PN [bar] | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|--------------|----------------------|-------------|------------|------------|-----------|------------|------------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| 180.0 | 178.0 - 182.0 | 16.0 | 10.0 | 141 | 80 | 205 | 233 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 193.7 | 192.0 - 195.5 | 16.0 | 10.0 | 141 | 80 | 224 | 243 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 200.0 | 198.0 - 202.0 | 15.0 | 10.0 | 141 | 80 | 230 | 249 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 204.0 | 202.0 - 206.0 | 14.0 | 10.0 | 141 | 80 | 234 | 253 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 206.0 | 204.0 - 208.0 | 14.0 | 5.5 | 141 | 80 | 234 | 253 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 219.1 | 216.9 - 221.3 | 16.0 | 10.0 | 142 | 80 | 250 | 269 | 5 - 10 | 5 - 30 | 60 | 10 | 12 |
| 244.5 | 242.0 - 247.0 | 9.0 | 5.5 | 141 | 80 | 275 | 294 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 250.0 | 247.5 - 252.5 | 9.0 | 5.5 | 141 | 80 | 280 | 299 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 254.0 | 251.5 - 256.5 | 9.0 | 5.5 | 141 | 80 | 284 | 303 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 256.0 | 253.5 - 258.5 | 9.0 | 5.5 | 141 | 80 | 284 | 303 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 267.0 | 264.5 - 269.5 | 8.0 | 5.0 | 141 | 80 | 297 | 316 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 273.0 | 270.5 - 275.5 | 7.0 | 4.0 | 141 | 80 | 303 | 322 | 5 - 10 | 5 - 35 | 60 | 10 | 12 |
| 273.0 | 270.5 - 275.5 | 16.0 | 4.0 | 141 | 80 | 303 | 326 | 5 - 10 | 5 - 35 | 80 | 14 | 16 |
| 306.0 | 303.0 - 309.0 | 6.0 | 3.0 | 141 | 80 | 334 | 353 | 5 - 10 | 5 - 35 | 60 | 10 | 12 |
| 323.9 | 320.5 - 327.0 | 5.0 | 3.0 | 141 | 80 | 354 | 373 | 5 - 10 | 5 - 35 | 60 | 10 | 12 |
| 323.9 | 320.5 - 327.0 | 13.0 | 3.0 | 141 | 80 | 354 | 377 | 5 - 10 | 5 - 35 | 90 | 14 | 16 |
| 355.6 | 352.0 - 359.0 | 10.0 | 2.5 | 141 | 80 | 386 | 405 | 5 - 10 | 5 - 35 | 90 | 14 | 16 |
| 406.4 | 402.5 - 410.5 | 7.0 | 2.0 | 141 | 80 | 436 | 455 | 5 - 10 | 5 - 35 | 100 | 14 | 16 |
| 457.2 | 452.5 - 461.5 | 5.0 | - | 141 | 80 | 487 | 506 | 5 - 10 | 5 - 35 | 100 | 14 | 16 |
| 508.0 | 503.5 - 512.5 | 4.0 | - | 141 | 80 | 538 | 557 | 5 - 10 | 5 - 35 | 110 | 14 | 16 |
| 558.8 | 554.5 - 563.5 | 3.0 | - | 141 | 80 | 589 | 608 | 5 - 10 | 5 - 35 | 110 | 14 | 16 |
| 609.6 | 605.5 - 614.0 | 2.0 | - | 141 | 80 | 640 | 659 | 5 - 10 | 5 - 35 | 120 | 14 | 16 |
| 711.2 | 707.0 - 715.0 | 1.0 | - | 141 | 80 | 742 | 761 | 5 - 10 | 5 - 35 | 120 | 14 | 16 |

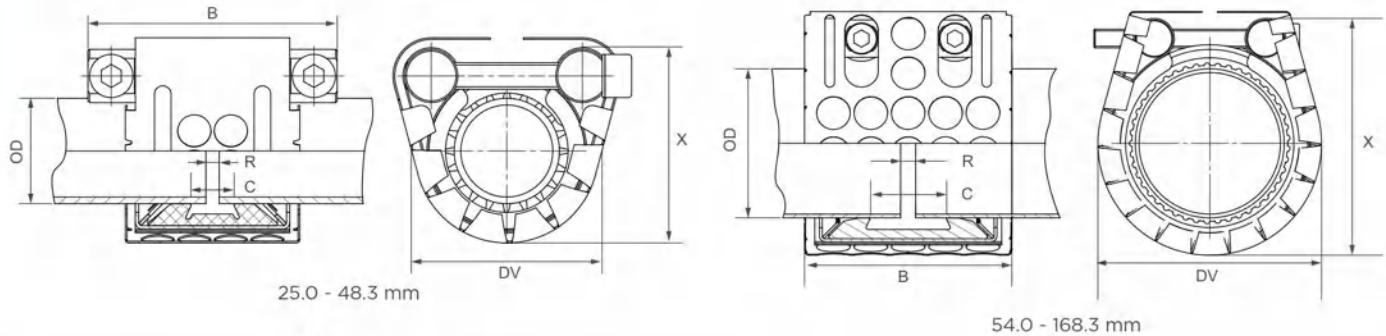
CONTINUOUSLY VARIABLE INTERMEDIATE SIZES FROM 180.0 TO 711.2.6 mm ARE AVAILABLE
REFER TO MINIMUM WALL THICKNESS (see page 105)

Remarks:

- Follow fitting instructions
- PN () = working pressure considering the application loads
 Test pressure = PN () x 1.5 (for example industry, water supply etc.)
 PN () = nominal pressure, includes four times safety factor (e.g. shipbuilding)
- The pressure values are valid on radial rigid carbon steel pipes under static loads
- Strip inserts are optional accessories (see page 87)
- Additional sealing sleeves and temperature ranges on request



| Components / Materials | W1 | W2 | W4 | W5 |
|-------------------------------|---|----|----|-----------------------|
| Casing | | | | AISI 316 L or similar |
| Bolts | | | | A4 - 80 |
| Bars | | | | AISI 316 L or similar |
| Anchoring rings | | | | AISI 301 |
| Strip insert (option) | | | | AISI 316 L / PVDF |
| Sealing sleeve EPDM | Temp.: -20°C up to +100°C Medium: all qualities of water, waste water, air, solids and chemical products | | | |
| Sealing sleeve NBR | Temp.: -20°C up to +80°C Medium: water, gas, oil, fuel and other hydrocarbons | | | |
| Sealing sleeve FPM/FKM | Temp.: -20°C up to +180°C Medium: ozone, oxygen, acids, gas, oil and fuel (only with strip insert) | | | |



25.0 - 48.3 mm

54.0 - 168.3 mm



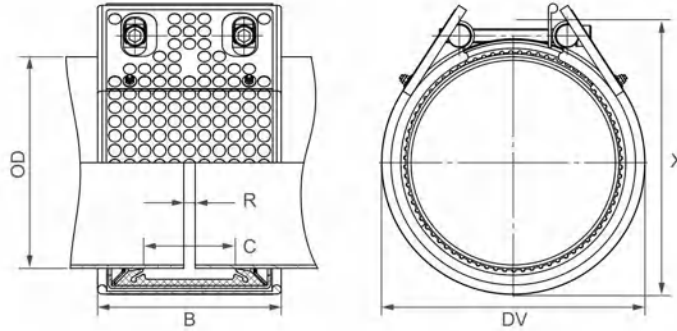
| OD [mm] | Clamping range [mm] | PN [bar] | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|---------|---------------------|----------|----------|-----------|--------|---------|--------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| 25.0 | 24.5 - 25.5 | 64.0 | 16.0 | 46.5 / 75 | 18 | 51 | 58 | 5 | 5 - 10 | 10 | 6 | 8 |
| 26.9 | 26.4 - 27.4 | 58.0 | 16.0 | 46.5 / 75 | 18 | 54 | 61 | 5 | 5 - 10 | 10 | 6 | 8 |
| 28.0 | 27.5 - 28.5 | 50.0 | 16.0 | 46.5 / 75 | 18 | 55 | 62 | 5 | 5 - 10 | 10 | 6 | 8 |
| 30.0 | 29.5 - 30.5 | 42.0 | 16.0 | 46.5 / 75 | 18 | 57 | 65 | 5 | 5 - 10 | 10 | 6 | 8 |
| 33.7 | 33.2 - 34.2 | 39.0 | 16.0 | 46.5 / 75 | 18 | 61 | 70 | 5 | 5 - 10 | 10 | 6 | 8 |
| 35.0 | 34.5 - 35.5 | 37.0 | 16.0 | 46.5 / 75 | 18 | 62 | 71 | 5 | 5 - 10 | 12 | 6 | 8 |
| 38.0 | 37.5 - 38.5 | 36.0 | 16.0 | 46.5 / 75 | 18 | 65 | 74 | 5 | 5 - 10 | 12 | 6 | 8 |
| 40.0 | 39.5 - 40.5 | 35.0 | 16.0 | 46.5 / 75 | 18 | 67 | 76 | 5 | 5 - 10 | 12 | 6 | 8 |
| 42.4 | 41.9 - 42.9 | 33.0 | 16.0 | 46.5 / 75 | 18 | 70 | 79 | 5 | 5 - 10 | 12 | 6 | 8 |
| 44.5 | 44.0 - 45.0 | 30.0 | 16.0 | 46.5 / 75 | 18 | 72 | 81 | 5 | 5 - 10 | 12 | 6 | 8 |
| 48.3 | 47.8 - 48.8 | 28.0 | 16.0 | 46.5 / 75 | 18 | 75 | 86 | 5 | 5 - 10 | 12 | 6 | 8 |
| 54.0 | 53.5 - 54.5 | 24.0 | 16.0 | 65 | 24 | 81 | 92 | 5 | 5 - 15 | 15 | 6 | 8 |
| 57.0 | 56.4 - 57.6 | 23.0 | 16.0 | 65 | 24 | 84 | 95 | 5 | 5 - 15 | 15 | 6 | 8 |
| 60.3 | 59.7 - 60.9 | 23.0 | 16.0 | 65 | 24 | 87 | 98 | 5 | 5 - 15 | 15 | 6 | 8 |
| 63.0 | 62.4 - 63.6 | 23.0 | 16.0 | 65 | 24 | 90 | 101 | 5 | 5 - 15 | 15 | 6 | 8 |
| 66.6 | 64.9 - 67.3 | 22.0 | 16.0 | 65 | 24 | 94 | 105 | 5 | 5 - 15 | 15 | 6 | 8 |
| 70.0 | 68.9 - 70.7 | 22.0 | 16.0 | 65 | 24 | 97 | 109 | 5 | 5 - 15 | 15 | 6 | 8 |
| 73.0 | 72.3 - 73.7 | 21.0 | 16.0 | 65 | 24 | 100 | 112 | 5 | 5 - 15 | 15 | 6 | 8 |
| 76.1 | 75.3 - 76.9 | 35.0 | 16.0 | 100 | 40 | 110 | 127 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 79.5 | 78.7 - 80.3 | 32.0 | 16.0 | 100 | 40 | 113 | 130 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 84.0 | 83.2 - 84.8 | 29.0 | 16.0 | 100 | 40 | 117 | 135 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 88.9 | 88.0 - 89.8 | 26.0 | 16.0 | 100 | 40 | 122 | 139 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 95.0 | 94.0 - 96.0 | 24.0 | 16.0 | 100 | 40 | 127 | 144 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 98.0 | 97.0 - 99.0 | 24.0 | 16.0 | 100 | 40 | 131 | 148 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 100.6 | 99.6 - 101.6 | 23.0 | 16.0 | 100 | 40 | 134 | 151 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 101.6 | 100.6 - 102.6 | 23.0 | 16.0 | 100 | 40 | 135 | 151 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 104.0 | 103.0 - 105.0 | 23.0 | 16.0 | 100 | 40 | 137 | 153 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 104.8 | 103.8 - 105.8 | 23.0 | 16.0 | 100 | 40 | 138 | 155 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 108.0 | 106.9 - 109.1 | 22.0 | 16.0 | 100 | 40 | 142 | 159 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 114.3 | 113.2 - 115.4 | 22.0 | 16.0 | 100 | 40 | 148 | 165 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 118.0 | 116.9 - 119.1 | 22.0 | 16.0 | 100 | 40 | 152 | 171 | 5 - 10 | 5 - 25 | 35 | 8 | 10 |
| 125.0 | 123.7 - 126.3 | 21.0 | 16.0 | 115 | 53 | 162 | 179 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 127.0 | 125.7 - 128.3 | 21.0 | 16.0 | 115 | 53 | 164 | 181 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 129.0 | 127.7 - 130.3 | 21.0 | 16.0 | 115 | 53 | 166 | 183 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 130.2 | 128.9 - 131.5 | 21.0 | 16.0 | 115 | 53 | 167 | 184 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 133.0 | 131.7 - 134.3 | 21.0 | 16.0 | 115 | 53 | 170 | 187 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 139.7 | 138.3 - 141.1 | 20.0 | 16.0 | 115 | 53 | 176 | 194 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 141.3 | 139.9 - 142.7 | 20.0 | 16.0 | 115 | 53 | 178 | 195 | 5 - 10 | 5 - 30 | 45 | 10 | 12 |
| 144.0 | 142.6 - 145.4 | 20.0 | 16.0 | 115 | 53 | 181 | 188 | 5 - 10 | 5 - 30 | 50 | 10 | 12 |
| 154.0 | 152.5 - 155.5 | 18.0 | 16.0 | 115 | 53 | 191 | 208 | 5 - 10 | 5 - 30 | 50 | 10 | 12 |
| 159.0 | 157.4 - 160.6 | 18.0 | 16.0 | 115 | 53 | 196 | 213 | 5 - 10 | 5 - 30 | 50 | 10 | 12 |
| 165.0 | 163.4 - 166.6 | 16.0 | 16.0 | 115 | 53 | 202 | 219 | 5 - 10 | 5 - 30 | 50 | 10 | 12 |
| 168.3 | 166.6 - 170.0 | 16.0 | 16.0 | 115 | 53 | 205 | 222 | 5 - 10 | 5 - 30 | 50 | 10 | 12 |

REFER TO MINIMUM WALL THICKNESS (see page 105)

- Follow fitting instructions
- According to DIN 86128
- PN () = working pressure considering the application loads
Test pressure = PN () x 1.5 (for example industry, water supply etc.)
- PN () = nominal pressure, includes four times safety factor (e.g. shipbuilding)
- The pressure values are valid on radial rigid carbon steel pipes under static loads
- Strip inserts are optional accessories (see page 87)
- Additional sealing sleeves and temperature ranges on request

| Components / Materials | W1 | W2 | W4 | W5 |
|------------------------|----|------------------------------|----|------------------------------|
| Casing | | AISI 316 L or similar | | AISI 316 L or similar |
| Bolts | | AISI 4135 | | A4 - 80 |
| Bars | | AISI 12L14, galvanised | | AISI 316 L or similar |
| Anchoring rings | | AISI 301 | | AISI 301 |
| Strip insert (option) | | AISI 316 L or similar / HDPE | | AISI 316 L or similar / HDPE |

| | |
|---|---|
| Sealing sleeve EPDM | Temp.: -20°C up to +100°C Medium: all qualities of water, waste water, air, solids and chemical products |
| Sealing sleeve NBR | Temp.: -20°C up to +80°C Medium: water, gas, oil, fuel and other hydrocarbons |
| Sealing sleeve FPM/FKM | Temp.: -20°C up to +180°C Medium: ozone, oxygen, acids, gas, oil and fuel (only with strip insert) |



| OD [mm] | Clamping range [mm] | PN [bar] | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|---------|---------------------|----------|----------|--------|--------|---------|--------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| 180.0 | 178.0 - 182.0 | 16.0 | 10.0 | 158 | 80 | 260 | 238 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 193.7 | 192.0 - 195.5 | 16.0 | 10.0 | 158 | 80 | 275 | 248 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 200.0 | 198.0 - 202.0 | 15.0 | 10.0 | 158 | 80 | 280 | 254 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 204.0 | 202.0 - 206.0 | 14.0 | 10.0 | 158 | 80 | 285 | 258 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 206.0 | 204.0 - 208.0 | 14.0 | 5.5 | 158 | 80 | 234 | 258 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 219.1 | 216.9 - 221.3 | 16.0 | 10.0 | 142 | 80 | 250 | 274 | 5 - 10 | 5 - 30 | 60 | 10 | 12 |
| 244.5 | 242.0 - 247.0 | 9.0 | 5.5 | 158 | 80 | 325 | 299 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 250.0 | 247.5 - 252.5 | 9.0 | 5.5 | 158 | 80 | 330 | 304 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 254.0 | 251.5 - 256.5 | 9.0 | 5.5 | 158 | 80 | 330 | 308 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 256.0 | 253.5 - 258.5 | 9.0 | 5.5 | 158 | 80 | 284 | 308 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 267.0 | 264.5 - 269.5 | 8.0 | 5.0 | 158 | 80 | 345 | 321 | 5 - 10 | 5 - 35 | 50 | 10 | 12 |
| 273.0 | 270.5 - 275.5 | 7.0 | 4.0 | 158 | 80 | 350 | 327 | 5 - 10 | 5 - 35 | 60 | 10 | 12 |
| 304.0 | 301.0 - 307.0 | 6.0 | 4.0 | 158 | 80 | 380 | 331 | 5 - 10 | 5 - 35 | 60 | 10 | 12 |
| 306.0 | 303.0 - 309.0 | 6.0 | 3.0 | 158 | 80 | 334 | 358 | 5 - 10 | 5 - 35 | 60 | 10 | 12 |
| 323.9 | 320.5 - 327.0 | 5.0 | 3.0 | 158 | 80 | 400 | 378 | 5 - 10 | 5 - 35 | 60 | 10 | 12 |
| 355.6 | 352.0 - 359.0 | 10.0 | 2.5 | 158 | 67 | 430 | 410 | 5 - 10 | 5 - 35 | 90 | 14 | 16 |
| 406.4 | 402.5 - 410.5 | 7.0 | 2.0 | 158 | 67 | 475 | 460 | 5 - 10 | 5 - 35 | 100 | 14 | 16 |

REFER TO MINIMUM WALL THICKNESS (see page 105)

Remarks:

- Follow fitting instructions
- PN () = working pressure considering the application loads
Test pressure = PN () x 1.5 (for example industry, water supply etc.)
PN () = nominal pressure, includes four times safety factor (e.g. shipbuilding)
- The pressure values are valid on radial rigid carbon steel pipes under static loads
- Strip inserts are optional accessories (see page 87)
- Additional sealing sleeves and temperature ranges on request



EASY & ECONOMIC STRAUB-ECO-GRIP



6
bar

The STRAUB-ECO-GRIP complements the STRAUB range where lower pressures are needed.

STRAUB-ECO-GRIP couplings are used where the loads on the pipe system are low, e.g. service and control lines in the industrial area or applications in plant engineering or process technology.

Due to the small casing width and the one-screw closure, the STRAUB-ECO-GRIP only needs very little space.

The ready to use coupling provides maximum flexibility - on metal and also plastic pipes (PVC, ABS, CPVC).

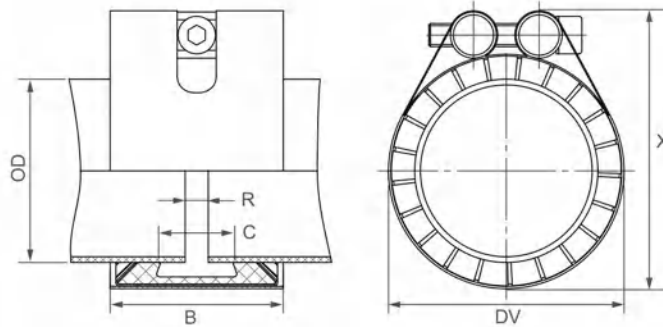


- Outside diameter: 26.9 up to 168.3 mm
- Temperature: -10°C up to +40°C
- Sealing sleeve: EPDM



| Components / Materials | W1 | W2 | W4 | W5 |
|------------------------|----|----|-----------------------|----|
| Casing | | | AISI 301 | |
| Bolts | | | A4 - 80 | |
| Bars | | | AISI 316 L or similar | |
| Anchoring rings | | | AISI 301 | |
| Strip insert (option) | | | AISI 316 L or similar | |

Sealing sleeve EPDM Temp.: -10°C up to +40°C
 Medium: all qualities of water, waste water, air, solids and chemical products



| OD [mm] | Clamping range [mm] | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|---------|---------------------|----------|--------|--------|---------|--------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| 26.9 | 26.4 - 27.4 | 6.0 | 45 | 18 | 41 | 54 | 5 | 10 | 10 | 6 | 8 |
| 30.0 | 29.5 - 30.5 | 6.0 | 45 | 18 | 45 | 58 | 5 | 10 | 10 | 6 | 8 |
| 33.7 | 33.2 - 34.2 | 6.0 | 45 | 18 | 48 | 61 | 5 | 10 | 10 | 6 | 8 |
| 38.0 | 37.5 - 38.5 | 6.0 | 45 | 18 | 52 | 65 | 5 | 10 | 10 | 6 | 8 |
| 42.4 | 41.9 - 42.9 | 6.0 | 45 | 18 | 56 | 69 | 5 | 10 | 12 | 6 | 8 |
| 44.5 | 44.0 - 45.0 | 6.0 | 45 | 18 | 59 | 72 | 5 | 10 | 12 | 6 | 8 |
| 48.3 | 47.8 - 48.8 | 6.0 | 45 | 18 | 62 | 75 | 5 | 10 | 15 | 6 | 8 |
| 57.0 | 56.4 - 57.6 | 6.0 | 60 | 26 | 71 | 84 | 5 | 10 | 15 | 6 | 8 |
| 58.0 | 57.5 - 58.5 | 6.0 | 60 | 26 | 73 | 86 | 5 | 10 | 15 | 6 | 8 |
| 60.3 | 59.7 - 60.9 | 6.0 | 60 | 26 | 76 | 89 | 5 | 10 | 15 | 6 | 8 |
| 63.0 | 62.2 - 63.8 | 6.0 | 60 | 26 | 86 | 99 | 5 | 10 | 15 | 6 | 8 |
| 76.1 | 75.3 - 76.9 | 6.0 | 60 | 26 | 92 | 105 | 5 | 10 | 18 | 6 | 8 |
| 78.0 | 77.1 - 78.8 | 6.0 | 60 | 26 | 95 | 108 | 5 | 10 | 18 | 6 | 8 |
| 83.0 | 82.1 - 83.8 | 6.0 | 60 | 26 | 101 | 114 | 5 | 10 | 18 | 6 | 8 |
| 88.9 | 88.0 - 89.8 | 6.0 | 60 | 26 | 108 | 121 | 5 | 10 | 18 | 6 | 8 |
| 104.0 | 103.0 - 105.0 | 6.0 | 60 | 26 | 120 | 133 | 5 | 10 | 18 | 6 | 8 |
| 108.0 | 106.9 - 109.1 | 6.0 | 60 | 26 | 124 | 137 | 5 | 10 | 18 | 6 | 8 |
| 110.0 | 108.9 - 111.1 | 6.0 | 60 | 26 | 126 | 139 | 5 | 10 | 18 | 6 | 8 |
| 114.3 | 113.2 - 115.4 | 6.0 | 60 | 26 | 130 | 143 | 5 | 10 | 18 | 6 | 8 |
| 129.0 | 128.0 - 130.0 | 6.0 | 62 | 26 | 145 | 162 | 5 | 10 | 30 | 6 | 8 |
| 133.0 | 131.7 - 134.3 | 6.0 | 62 | 26 | 149 | 166 | 5 | 10 | 30 | 8 | 10 |
| 135.0 | 133.7 - 136.3 | 6.0 | 62 | 26 | 152 | 169 | 5 | 10 | 30 | 8 | 10 |
| 139.7 | 138.3 - 141.1 | 6.0 | 62 | 26 | 156 | 173 | 5 | 10 | 30 | 8 | 10 |
| 159.0 | 157.4 - 160.6 | 6.0 | 62 | 26 | 177 | 194 | 5 | 10 | 35 | 8 | 10 |
| 160.0 | 158.4 - 161.6 | 6.0 | 62 | 26 | 179 | 196 | 5 | 10 | 35 | 8 | 10 |
| 168.3 | 166.6 - 170.0 | 6.0 | 62 | 26 | 185 | 202 | 5 | 10 | 35 | 8 | 10 |

INTERMEDIATE SIZES ON REQUEST
 REFER TO MINIMUM WALL THICKNESS (see page 105)

Remarks:

- Follow fitting instructions
- PN = working pressure considering the application loads
 Test pressure = PN x 1.5 (for example industry, water supply etc.)
- The pressure values are valid on radial rigid carbon steel pipes under static loads
- Strip inserts are optional accessories (see page 87)
- Additional dimensions, sealing sleeves and temperature ranges on request



CONNECT UNIVERSALLY WITH **STRAUB-COMBI-GRIP** and **STRAUB-PLAST-GRIP**



STRAUB-COMBI-GRIP for transitions from metal to plastic pipes; STRAUB-PLAST-GRIP for the connection of plastic pipes.

The installation and connection of plastic pipes presents new challenges for the contractor. Many connection types are dependent on the weather or temperature or need electrical equipment and special tools for the installation.

Pipes made of all types of plastic can be connected with STRAUB-PLAST-GRIP. In particular, two different plastics can be connected to each other.

In the case of adjustments to or changes of already installed systems, the pipe connection can be easily detached and re-used. The costs/benefits ratio is positively influenced.

STRAUB-COMBI-GRIP and STRAUB-PLAST-GRIP are axial restraint reliable pipe connections that can be used everywhere at any time.



STRAUB-COMBI-GRIP

- Outside diameter: 38.0 up to 355.0 mm
- Temperature: -20°C up to +100°C
- Sealing sleeve: EPDM, NBR



STRAUB-PLAST-GRIP



Connecting plastic pipes (PE/PP) requires the use of stiffening rings

STIFFENING RINGS

Thermoplastic pipes can be deformed under the influence of pressure and heat.

Through the use of STRAUB stiffening rings, a constriction of the plastic pipe ends is prevented.

STRAUB stiffening rings consist of stainless steel DIN 1.4301/AISI 304 and are available in slotted (OD 40 - 315mm) and welded designs (OD 355 - 1600 mm). One of the following may be required:

- Inside diameter
- SDR number
- Wall thickness of the plastic pipe

If the pipes already exhibit constriction due to long storage, we recommend cutting off these constricted sections before fitting the STRAUB stiffening rings. Slotted stiffening rings must be fitted in the direction of the arrow marked and installed flush with the pipe end.

Note:

For plastic pipes in PVC, ABS and CPVC, and with fibreglass pipes, no stiffening rings are required for media temperatures under 40°C.



Table for choosing the STRAUB-PLAST-GRIP stiffening ring

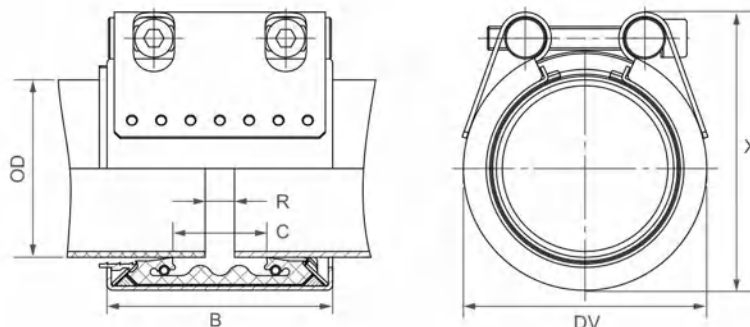
| SDR | 41 | 33 | 26 | 17 | 11 | 7.4 |
|-----------|----------|----------|----------|----------|----------|----------|
| Serie-Nr. | S 20 | S 16 | S 12.5 | S 8 | S 5 | S 3.2 |
| Norm | DIN 8074 | DIN 8074 | DIN 8074 | DIN 8074 | DIN 8074 | DIN 8074 |
| Pipe OD | Pipe ID | Pipe ID | Pipe ID | Pipe ID | Pipe ID | Pipe ID |
| OD [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| 40 | - | - | 36.4 | 35.2 | 32.6 | 29 |
| 50 | - | 46.4 | 46.0 | 44.0 | 40.8 | 36.2 |
| 63 | 59.4 | 59.0 | 58.0 | 55.4 | 51.4 | 45.8 |
| 75 | 71.2 | 70.4 | 69.2 | 66.0 | 61.4 | 54.4 |
| 90 | 85.6 | 84.4 | 83.0 | 79.2 | 73.6 | 65.4 |
| 110 | 104.6 | 103.2 | 101.6 | 96.8 | 90.0 | 79.8 |
| 125 | 118.8 | 117.2 | 115.4 | 110.2 | 102.2 | 90.8 |
| 140 | 133.0 | 131.4 | 129.2 | 123.4 | 114.6 | 101.6 |
| 160 | 152.0 | 150.2 | 147.6 | 141.0 | 130.8 | 116.2 |
| 180 | 171.2 | 169.0 | 166.2 | 158.6 | 147.2 | 130.8 |
| 200 | 190.2 | 187.6 | 184.6 | 176.2 | 163.6 | 145.2 |
| 225 | 214.0 | 211.2 | 207.8 | 198.2 | 184.0 | 163.4 |
| 250 | 237.6 | 234.6 | 230.8 | 220.4 | 204.6 | 181.6 |
| 280 | 266.2 | 262.8 | 258.6 | 246.8 | 229.2 | 203.4 |
| 315 | 299.6 | 295.6 | 290.8 | 277.6 | 257.8 | 228.8 |

Remarks:

- Choosing stiffening rings owing to measurements on pipes only conditionally possible
- Valid only to soft thermoplastic pipes f.e. PE, PP, etc.
- Stiffening rings are optional accessories and has to be ordered separately.

| Components / Materials | W1 | W2 | W4 | W5 |
|------------------------|----|------------------------------|------------------------------|------------------------------|
| Casing | | AISI 316 L | AISI 316 L | AISI 316 L or similar |
| Bolts | | AISI 4135 | A4 - 80 | A4 - 80 |
| Bars | | AISI 12L14, galvanised | AISI 304 / 316 L | AISI 316 L or similar |
| Anchoring rings | | AISI A106, galvanised | AISI 304 | AISI 301 / 304 |
| Strip insert (option) | | AISI 316 L or similar / PVDF | AISI 316 L or similar / PVDF | AISI 316 L or similar / PVDF |

| | |
|----------------------------|--|
| Sealing sleeve EPDM | Temp.: -20°C up to +100°C |
| | Medium: all qualities of water, waste water, air, solids and chemical products |
| Sealing sleeve NBR | Temp.: -20°C up to +80°C |
| | Medium: water, gas, oil, fuel and other hydrocarbons |



| OD [mm] | Clamping range [mm] | | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|--------------------------|---------------------|---------------|------------------------|--------|--------|---------|--------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| | Plastic | Metal | | | | | | | | | | |
| 40.0/38.0 | 39.0 - 40.5 | 37.5 - 39.0 | 16.0 | 61 | 19 | 60 | 73 | 5 | 5 - 10 | 15 | 6 | 8 |
| 40.0/42.4 | 39.0 - 40.5 | 42.0 - 43.5 | 16.0 | 61 | 20 | 63 | 76 | 5 | 5 - 10 | 15 | 6 | 8 |
| 50.0/48.3 | 49.0 - 50.5 | 47.8 - 49.0 | 16.0 | 61 | 26 | 70 | 83 | 5 | 5 - 10 | 15 | 6 | 8 |
| 63.0/60.3 | 62.0 - 64.0 | 59.7 - 61.0 | 16.0 | 76 | 32 | 85 | 98 | 5 - 10 | 5 - 25 | 20 | 6 | 8 |
| 75.0/76.1 | 74.0 - 76.0 | 75.0 - 77.5 | 16.0 | 94 | 39 | 100 | 117 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 90.0/88.9 | 89.0 - 91.0 | 87.0 - 90.0 | 16.0 | 94 | 39 | 118 | 123 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 110.0/108.0 | 109.0 - 111.0 | 106.5 - 110.5 | 16.0 | 94 | 39 | 135 | 151 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 110.0/114.3 | 109.0 - 111.0 | 112.0 - 116.0 | 16.0 | 97 | 45 | 139 | 157 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 114.3/114.3 | 113.0 - 115.0 | 112.0 - 116.0 | 16.0 | 94 | 39 | 140 | 157 | 5 - 10 | 5 - 25 | 30 | 8 | 10 |
| 140.0/139.7 | 139.0 - 142.0 | 137.5 - 141.0 | 16.0 | 109 | 43 | 168 | 191 | 5 - 15 | 5 - 30 | 60 | 10 | 12 |
| 160.0/159.0 | 159.0 - 162.0 | 157.0 - 160.5 | 16.0/10.0 ¹ | 109 | 43 | 188 | 210 | 5 - 15 | 5 - 30 | 60 | 10 | 12 |
| 160.0/168.3 ¹ | 159.0 - 162.0 | 166.6 - 170.0 | 16.0 | 110 | 54 | 192 | 222 | 5 - 10 | 5 - 30 | 20 | 10 | 12 |
| 200.0/206.0 | 198.0 - 202.0 | 204.0 - 208.0 | 16.0 | 141 | 80 | 227 | 246 | 5 - 15 | 5 - 35 | 60 | 10 | 12 |
| 225.0/219.1 | 223.0 - 227.0 | 216.9 - 221.3 | 10.0 | 141 | 80 | 252 | 271 | 5 - 15 | 5 - 35 | 60 | 10 | 12 |
| 225.0/229.0 | 223.0 - 227.0 | 227.0 - 231.0 | 10.0 | 141 | 80 | 252 | 271 | 5 - 15 | 5 - 35 | 60 | 10 | 12 |
| 250.0/256.0 | 248.0 - 252.0 | 253.5 - 258.5 | 10.0 | 141 | 80 | 277 | 296 | 5 - 15 | 5 - 35 | 60 | 10 | 12 |
| 315.0/323.9 | 313.0 - 317.0 | 320.5 - 327.0 | 10.0 | 141 | 80 | 342 | 365 | 5 - 15 | 5 - 35 | 120 | 14 | 16 |
| 355.0/355.6 | 353.0 - 357.0 | 352.0 - 359.0 | 6.0 | 141 | 80 | 382 | 405 | 5 - 15 | 5 - 35 | 150 | 14 | 16 |

Remarks:

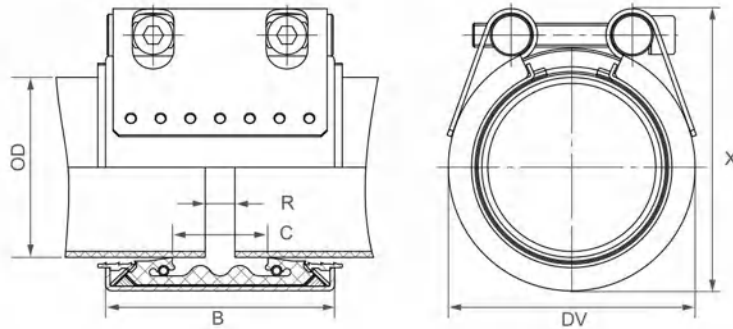
- Follow fitting instructions
- PN = working pressure considering the application loads
Test pressure = PN x 1.5 (for example industry, water supply etc.)
- For the installation of pipes of pipes made of HDPE and PP, STRAUB stiffening rings are required (see page 29)
- Strip inserts are optional accessories (see page 87)
- Additional sealing sleeves and temperature ranges on request

¹ 160.0/159.0 mm: version in W2 ⇒ PN 16 bar
version in W4 ⇒ PN 10 bar
160.0/168.3 mm: only available in W5



| Components / Materials | W1 | W2 | W4 | W5 |
|------------------------|----|------------------------------|------------------------------|------------------------------|
| Casing | | AISI 316 L | AISI 316 L | AISI 316 L or similar |
| Bolts | | AISI 4135 | A4 - 80 | A4 - 80 |
| Bars | | AISI 12L14, galvanised | AISI 304 / 316 L | AISI 316 L or similar |
| Anchoring rings | | AISI A106, galvanised | AISI 304 | AISI 301 / 304 |
| Strip insert (option) | | AISI 316 L or similar / PVDF | AISI 316 L or similar / PVDF | AISI 316 L or similar / PVDF |

| | |
|------------------------|---|
| Sealing sleeve EPDM | Temp.: -20°C up to +100°C Medium: all qualities of water, waste water, air, solids and chemical products |
| Sealing sleeve NBR | Temp.: -20°C up to +80°C Medium: water, gas, oil, fuel and other hydrocarbons |



| OD [mm] | Clamping range [mm] | PN [bar] | B [mm] | C [mm] | DV [mm] | X [mm] | R without strip insert [mm] | R with strip insert [mm] | Torque rate [Nm] | Allen head [mm] | Thread M... |
|---------|---------------------|------------------------|--------|--------|---------|--------|-----------------------------|--------------------------|------------------|-----------------|-------------|
| 40.0 | 39.0 - 40.5 | 16.0 | 61 | 19 | 60 | 73 | 5 | 5 - 15 | 15 | 6 | 8 |
| 50.0 | 49.0 - 50.5 | 16.0 | 61 | 26 | 70 | 83 | 5 | 5 - 15 | 15 | 6 | 8 |
| 63.0 | 62.0 - 64.0 | 16.0 | 76 | 32 | 85 | 98 | 5 - 10 | 5 - 20 | 20 | 6 | 8 |
| 75.0 | 74.0 - 76.0 | 16.0 | 94 | 39 | 99 | 117 | 5 - 10 | 5 - 25 | 25 | 8 | 10 |
| 90.0 | 89.0 - 91.0 | 16.0 | 94 | 39 | 118 | 123 | 5 - 10 | 5 - 25 | 25 | 8 | 10 |
| 110.0 | 109.0 - 111.0 | 16.0 | 94 | 39 | 135 | 151 | 5 - 10 | 5 - 25 | 25 | 8 | 10 |
| 114.3 | 113.0 - 115.0 | 16.0 | 94 | 39 | 139 | 157 | 5 - 10 | 5 - 30 | 25 | 10 | 12 |
| 125.0 | 124.0 - 126.0 | 16.0 | 94 | 43 | 152 | 174 | 5 - 15 | 5 - 30 | 60 | 10 | 12 |
| 140.0 | 139.0 - 142.0 | 16.0 | 108 | 43 | 168 | 191 | 5 - 15 | 5 - 30 | 60 | 10 | 12 |
| 160.0 | 159.0 - 162.0 | 16.0/10.0 ¹ | 109 | 43 | 188 | 210 | 5 - 15 | 5 - 25 | 60 | 10 | 12 |
| 180.0 | 178.0 - 182.0 | 16.0 | 141 | 80 | 207 | 226 | 5 - 15 | 5 - 35 | 60 | 10 | 12 |
| 200.0 | 198.0 - 202.0 | 16.0 | 141 | 80 | 227 | 246 | 5 - 15 | 5 - 35 | 60 | 10 | 12 |
| 225.0 | 223.0 - 227.0 | 10.0 | 141 | 80 | 252 | 271 | 5 - 15 | 5 - 35 | 60 | 10 | 12 |
| 250.0 | 248.0 - 252.0 | 10.0 | 141 | 80 | 277 | 296 | 5 - 15 | 5 - 35 | 60 | 10 | 12 |
| 280.0 | 278.0 - 282.0 | 10.0 | 141 | 80 | 307 | 330 | 5 - 15 | 5 - 35 | 100 | 14 | 16 |
| 315.0 | 313.0 - 317.0 | 10.0 | 141 | 80 | 342 | 365 | 5 - 15 | 5 - 35 | 120 | 14 | 16 |
| 355.0 | 353.0 - 357.0 | 6.0 | 141 | 80 | 382 | 405 | 5 - 15 | 5 - 35 | 150 | 14 | 16 |

Remarks:



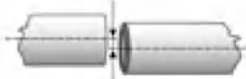




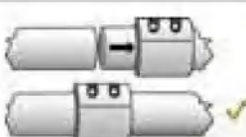



- Follow fitting instructions
- PN = working pressure considering the application loads
Test pressure = PN x 1.5 (for example industry, water supply etc.)
- For the installation of pipes made of HDPE and PP, STRAUB stiffening rings are required (see page 29)
- Strip inserts are optional accessories (see page 87)
- Additional sealing sleeves and temperature ranges on request

¹ 160.0/159.0 mm: version in W2 ⇒ PN 16 bar
version in W4 ⇒ PN 10 bar



STRAUB-GRIP FITTING INSTRUCTION



| | | |
|--|---|---|
| Installation conditions |  | <p>R = Pipe gap</p> <p>A space between pipe ends can arise through misalignment, inaccurate assembly or changes in length. STRAUB couplings can bridge spaces between pipe ends.</p> <ul style="list-style-type: none"> ▪ 5 - 10 mm without strip insert (depending on pipe OD, please observe the coupling label!) ▪ 5 - 35 mm with strip insert (depending on pipe OD, please observe techn. data sheet!) <p>Strip inserts are used in case of: large distance between pipe ends, swelling due to aggressive liquids, vacuum, under outside pressure, high temperature. Strip inserts are extras and must be ordered separately.</p> |
| |  | <p>Angular deflection α</p> <p>< \varnothing 60.3 mm \Rightarrow 5° > \varnothing 76.1 mm \Rightarrow 4° > \varnothing 219.1 mm \Rightarrow 2° > \varnothing 609.6 mm \Rightarrow 1°</p> <p>\Rightarrow See distance between pipe ends</p> |
| |  | <p>Linear misalignment</p> <p>1% of outer diameter (max. 3 mm) is admissible</p> |
| |  | <p>Outside diameter difference</p> <p>< \varnothing 100 mm \Rightarrow 2 mm > \varnothing 100 mm \Rightarrow 2 % > \varnothing 300 mm \Rightarrow 6 mm</p> |
| |  | <p>Min. pipe wall thickness</p> <p>Please refer to the min. pipe wall thickness on page 105.</p> |
| | | <p>Test pressure</p> <p>The pipe installation must be checked as follows before commissioning: 1,5 x working pressure</p> |
| <p>Do not work above limits or cummulate. Limits for static loads and radial rigid pipes only. For dynamic forces like pressure surges and thrust apply safety factor (contact factory).</p> | | |
| Installation |  | <p>De-burr and remove sharp edges from pipe ends. Clean the pipe surface. No dirt under sealing lips.</p> |
| |  | <p>Center coupling over gap between pipe ends and mark the coupling position; \Rightarrow min. pipe gap 5 mm</p> |
| |  | <p>Strip inserts are used in case of: large distance between pipe ends, swelling due to aggressive liquids, vacuum, under outside pressure, high temperature. Strip inserts are extras and must be ordered separately.</p> |
| |  | <p>Tighten the locking bolts with a torque wrench to the final prescribed torque rate engraved on the pipe joints outer surface. The torque wrench must be set to the value accordingly. Repeat the tightening sequence until a quarter turn or less is needed to reach the required torque.</p> |
| |  | <p>Straub couplings must be torqued to the specified value as printed on each coupling, failure to do so can result in injury or death. In case of leakage clean pipe and sealing lips surface before installing pipe joint again. Do not use the power wrench for stainless steel screws.</p> |
|  | <p>Additional corrosion protection</p> <p>If risk of corrosion exists, for long term pipe joint protection use shrink sleeves or protection tapes.</p> | |