

# TEEKAY

the pipe coupling



**two pipes... two screws... two minutes**

[www.teekaycouplings.com](http://www.teekaycouplings.com)

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The contents of this brochure give general information about the products we make. It is not intended to be a piping manual. Piping system design should only be undertaken by independent professionals or specialists.

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This brochure was originally written in the English language and, in the event of any conflict, inconsistency or discrepancy between the English language version and any translation the English language version shall apply.

# Introducing the Teekay Pipe Coupling System



Teekay Pipe Couplings allow pipes to be joined without the need for flanging, grooving, threading or welding. By simply butting two pipes together and connecting with a Teekay Pipe Coupling, space, weight, time and cost savings are achieved with every installation.

Teekay Couplings have been sold for over three decades to more than 85 countries worldwide for civil, water, oil & gas, marine, building service, process, automotive and countless other industrial projects for pipes between 21 mm and 4200 mm in diameter.



# Mechanical & Sealing Concepts

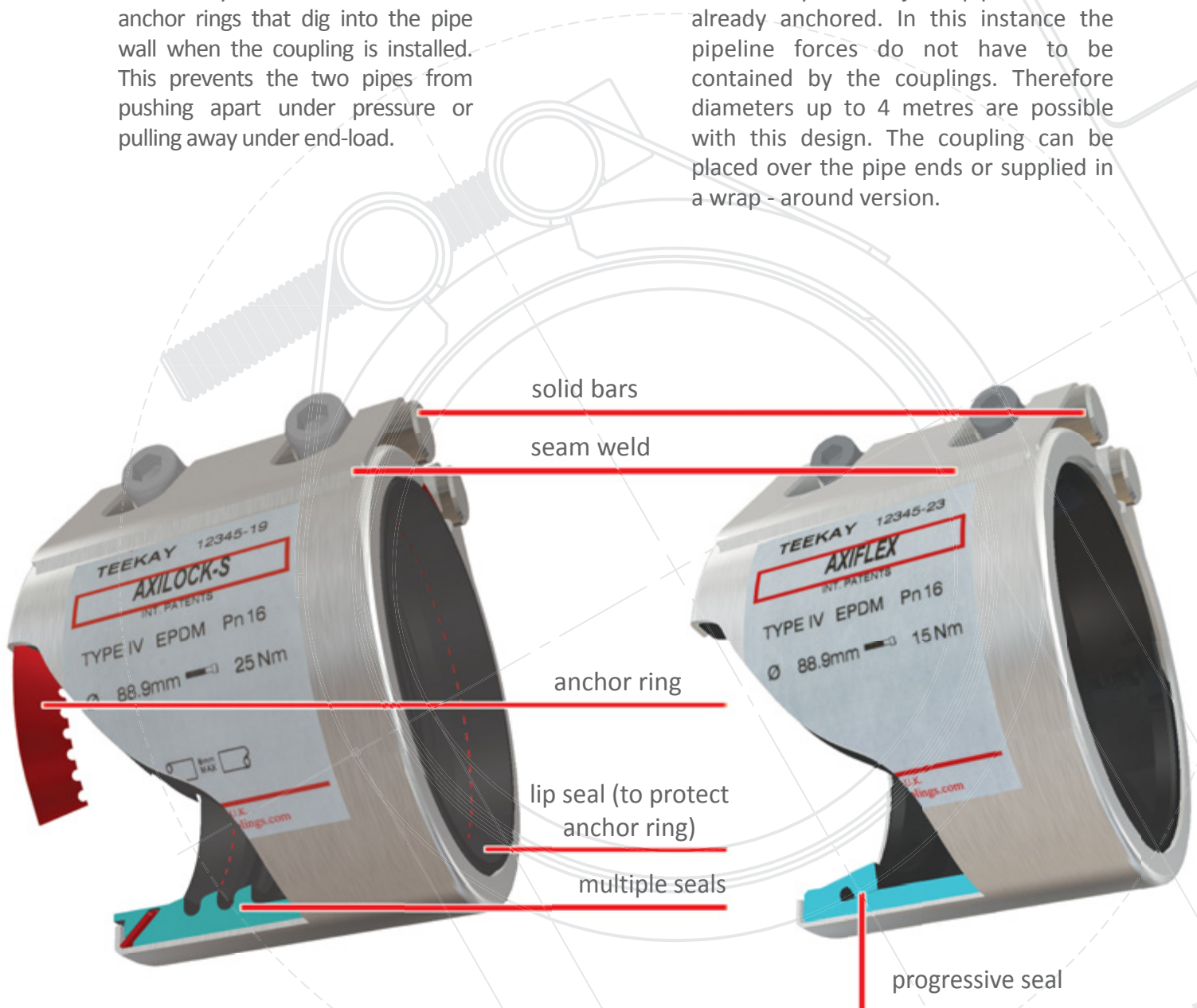
Teekay Couplings are available in two configurations, **Axilock** and **Axiflex**:

## Teekay **Axilock** (axially restrained)

The Teekay Axilock has two metallic anchor rings that dig into the pipe wall when the coupling is installed. This prevents the two pipes from pushing apart under pressure or pulling away under end-load.

## Teekay **Axiflex** (non axially restrained)

The Teekay Axiflex joins pipes that are already anchored. In this instance the pipeline forces do not have to be contained by the couplings. Therefore diameters up to 4 metres are possible with this design. The coupling can be placed over the pipe ends or supplied in a wrap-around version.

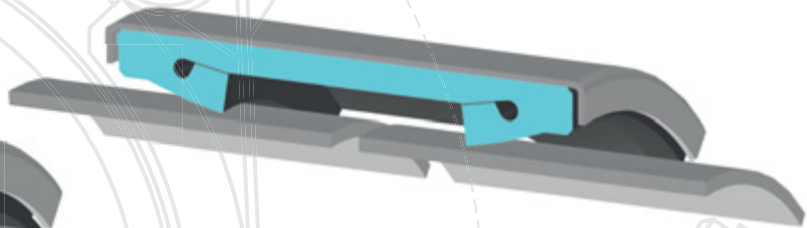
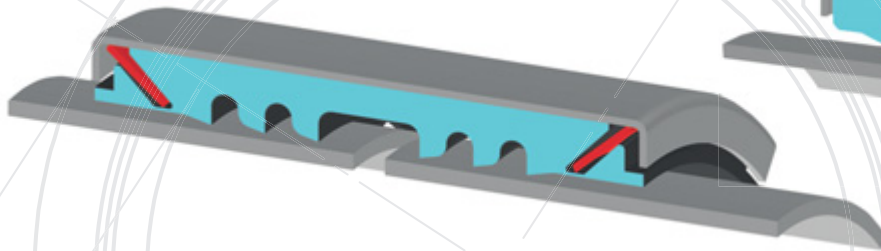




Each coupling (whether **Axilock** or **Axiflex**) consists of a casing, a gasket and a lockpart. The purpose of the casing is to house the gasket and to press it onto the pipe surface when the lockpart is closed. The lockpart is designed to pull the two ends of the casing together circumferentially around the pipe. In order to achieve this, the coupling is labelled clearly with a torque figure which ensures that the gasket is compressed sufficiently against the pipe surface.

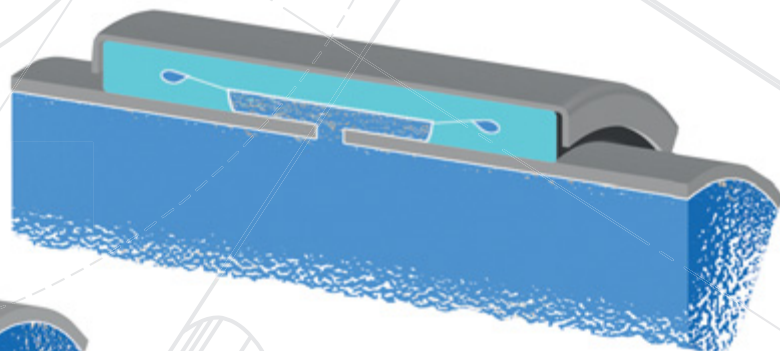
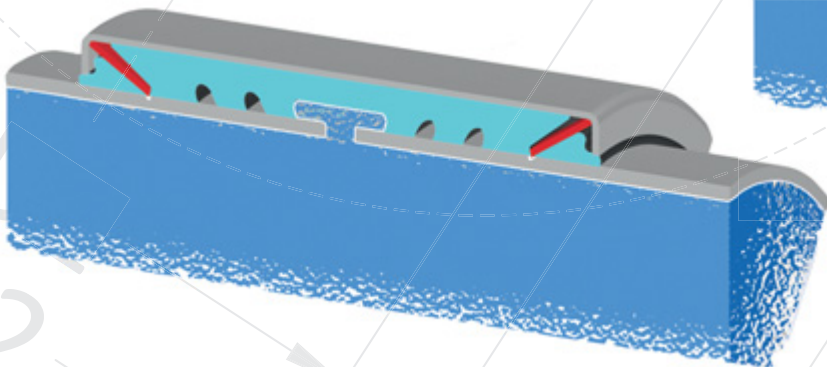
The **Axilock** has two anchor rings which are placed adjacent to, but separate from, the sealing mechanism.

The **Axiflex** has two thick sealing lips which allow for pipe expansion and contraction.



As the lockpart is tightened the sealing lips are pressed against the pipe surface to form a seal. At the same time the anchor rings penetrate the rubber, bite into the two pipes and prevent them from pulling apart, whether by external loading or internal pressure. The end seal is also pressed against the pipe surface, which protects both the anchor ring and the section of the pipe where the anchor rings have bitten, from any possible external corrosion.

The sealing lips press against the pipe surface and form lip seals. The lip seals are designed to resist the internal pressure in the pipes. As the pressure increases, the lip seals swell to seal more tightly against the pipe surface.



# Axilock-S and Axilock



The Teekay Axilock range is designed to replace the need for flanging, welding, pipe grooving and pipe threading by providing a quick and easy solution to joining plain-end pipe. Incorporating grip rings at each end of the fitting, the Teekay Axilock offers high levels of security by locking the pipes together under pressure. Each coupling is 100% rubber-lined, ensuring that high levels of corrosion resistance are maintained throughout the life of the coupling.

Available in single (Axilock-S) and double (Axilock) casing versions depending on pressure and diameter.

Both models are suitable for new installations and retro-fit, whether on a ship, building or process plant. The Teekay Axilock range offers a versatile pipe coupling system that accommodates angulation, vibration and vacuum.

## Material Selection

### Type I

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type II

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type IV

**Casing:** AISI 316L / DIN 1.4404  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

1.4462 Duplex casings and fasteners available on request.

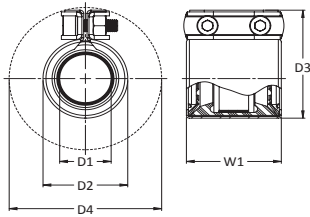
**Sizes:** 21.3 mm to 711.0 mm

**Gaskets:** EPDM -40°C to +100°C, NBR -20°C to +80°C, HNBR -20°C to +130°C, Viton -20°C to +250°C, Silicone -70°C to +270°C (*depending on grade*)

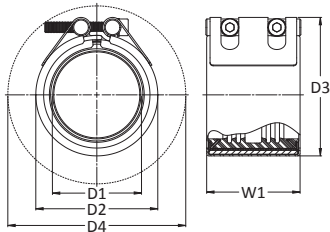
**Pipe Materials:** Carbon steel, stainless steel, copper, cunifer, cast and ductile iron, GRP, most plastics & other materials (see page 36).



# Axilock-S Dimensions

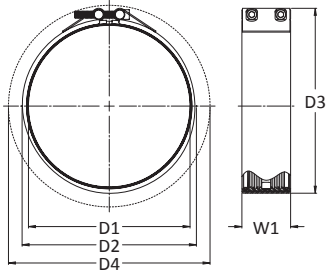


| D1<br>Pipe<br>O.D. | O.D.<br>Tolerance | Working Pressure |       | Axial Pull | W1   | D2   | D3   | D4   | Screw Size | Hex Socket<br>Adaptor | Weight | Box<br>Qty |
|--------------------|-------------------|------------------|-------|------------|------|------|------|------|------------|-----------------------|--------|------------|
| (mm)               | (mm)              | (bar)            | (bar) | (N)        | (mm) | (mm) | (mm) | (mm) |            | (mm)                  | KG     |            |
| 21.3               | 21.0 / 21.6       | 16               | 42    | 5704       | 45   | 34   | 50   | 77   | 2 x M6     | 5                     | 0.15   | 24         |
| 26.9               | 26.6 / 27.3       | 16               | 42    | 8528       | 45   | 39   | 56   | 83   | 2 x M6     | 5                     | 0.16   | 24         |
| 28.0               | 27.7 / 28.4       | 16               | 42    | 8994       | 45   | 40   | 57   | 84   | 2 x M6     | 5                     | 0.16   | 24         |
| 30.0               | 29.7 / 30.4       | 16               | 42    | 9900       | 45   | 42   | 59   | 86   | 2 x M6     | 5                     | 0.17   | 24         |
| 33.7               | 33.3 / 34.1       | 16               | 42    | 11600      | 45   | 46   | 63   | 90   | 2 x M6     | 5                     | 0.17   | 24         |
| 35.0               | 34.7 / 35.4       | 16               | 42    | 12031      | 45   | 47   | 64   | 91   | 2 x M6     | 5                     | 0.18   | 24         |



| D1<br>Pipe<br>O.D. | O.D.<br>Tolerance | Working Pressure |       | Axial Pull | W1   | D2   | D3   | D4   | Screw Size | Hex Socket<br>Adaptor | Weight | Box<br>Qty |
|--------------------|-------------------|------------------|-------|------------|------|------|------|------|------------|-----------------------|--------|------------|
| (mm)               | (mm)              | (bar)            | (bar) | (N)        | (mm) | (mm) | (mm) | (mm) |            | (mm)                  | KG     |            |
| 38                 | 37.0 / 39.0       | 16               | 42    | 14069      | 65   | 55   | 67   | 130  | 2 x M8     | 6                     | 0.42   | 12         |
| 42.4               | 41.4 / 43.4       | 16               | 42    | 16950      | 65   | 60   | 71   | 132  | 2 x M8     | 6                     | 0.43   | 12         |
| 44.5               | 43.5 / 45.5       | 16               | 42    | 18360      | 65   | 62   | 73   | 134  | 2 x M8     | 6                     | 0.45   | 12         |
| 48.3               | 47.3 / 49.3       | 16               | 42    | 21263      | 65   | 66   | 77   | 136  | 2 x M8     | 6                     | 0.47   | 12         |
| 54.0               | 53.0 / 55.0       | 16               | 42    | 25463      | 88   | 71   | 87   | 138  | 2 x M8     | 6                     | 0.72   | 12         |
| 57.0               | 56.0 / 58.0       | 16               | 42    | 27570      | 88   | 74   | 90   | 140  | 2 x M8     | 6                     | 0.85   | 12         |
| 60.3               | 59.0 / 62.0       | 16               | 42    | 30855      | 88   | 78   | 93   | 143  | 2 x M8     | 6                     | 0.87   | 12         |
| 63.0               | 62.0 / 65.0       | 16               | 42    | 32432      | 88   | 80   | 96   | 145  | 2 x M8     | 6                     | 0.90   | 12         |
| 67.0               | 66.0 / 69.0       | 16               | 42    | 35271      | 88   | 84   | 100  | 147  | 2 x M8     | 6                     | 0.90   | 12         |
| 70.0               | 69.0 / 72.0       | 16               | 42    | 36575      | 88   | 87   | 103  | 150  | 2 x M8     | 6                     | 0.91   | 12         |
| 73.0               | 72.0 / 75.0       | 16               | 42    | 35590      | 88   | 90   | 106  | 152  | 2 x M8     | 6                     | 0.93   | 12         |
| 76.1               | 75.0 / 78.0       | 16               | 42    | 37312      | 88   | 94   | 109  | 185  | 2 x M10    | 8                     | 0.95   | 12         |
| 82.5               | 81.5 / 84.5       | 16               | 42    | 43317      | 88   | 101  | 116  | 189  | 2 x M10    | 8                     | 1.00   | 12         |
| 84.0               | 83.0 / 86.0       | 16               | 42    | 43627      | 88   | 102  | 118  | 190  | 2 x M10    | 8                     | 1.02   | 12         |
| 88.9               | 88.0 / 91.0       | 16               | 42    | 44352      | 88   | 107  | 123  | 193  | 2 x M10    | 8                     | 1.05   | 12         |
| 98.0               | 97.0 / 100.0      | 16               | 42    | 59613      | 88   | 116  | 132  | 200  | 2 x M10    | 8                     | 1.25   | 12         |
| 101.6              | 100.5 / 103.5     | 16               | 42    | 63263      | 88   | 120  | 136  | 202  | 2 x M10    | 8                     | 1.28   | 12         |
| 104.0              | 103.0 / 106.0     | 16               | 42    | 65779      | 88   | 122  | 138  | 204  | 2 x M10    | 8                     | 1.31   | 12         |
| 108.0              | 107.0 / 110.0     | 16               | 42    | 69651      | 88   | 126  | 142  | 207  | 2 x M10    | 8                     | 1.35   | 12         |
| 110.0              | 109.0 / 112.0     | 16               | 42    | 72254      | 88   | 128  | 144  | 208  | 2 x M10    | 8                     | 1.41   | 12         |
| 114.3              | 113.0 / 116.0     | 16               | 42    | 76987      | 89   | 133  | 149  | 211  | 2 x M10    | 8                     | 1.50   | 12         |
| 118.0              | 117.0 / 120.0     | 16               | 42    | 79864      | 89   | 137  | 154  | 214  | 2 x M10    | 8                     | 1.58   | 5          |
| 127.0              | 126.0 / 129.0     | 16               | 42    | 87442      | 89   | 146  | 163  | 221  | 2 x M10    | 8                     | 1.75   | 5          |
| 129.0              | 128.0 / 131.0     | 16               | 42    | 89562      | 89   | 148  | 165  | 223  | 2 x M10    | 8                     | 1.85   | 5          |
| 133.0              | 132.0 / 135.0     | 16               | 42    | 94510      | 114  | 152  | 177  | 236  | 2 x M12    | 10                    | 2.46   | 5          |
| 139.7              | 139.0 / 142.0     | 16               | 42    | 101205     | 114  | 159  | 184  | 241  | 2 x M12    | 10                    | 2.65   | 5          |
| 141.3              | 140.5 / 143.5     | 13               | 34    | 101968     | 115  | 162  | 187  | 243  | 2 x M12    | 10                    | 2.80   | 5          |
| 144.0              | 143.0 / 146.0     | 13               | 34    | 104272     | 115  | 164  | 190  | 245  | 2 x M12    | 10                    | 2.90   | 4          |
| 154.0              | 153.0 / 156.0     | 13               | 34    | 112025     | 115  | 174  | 200  | 253  | 2 x M12    | 10                    | 3.05   | 4          |
| 159.0              | 158.0 / 161.0     | 13               | 34    | 117195     | 115  | 179  | 205  | 257  | 2 x M12    | 10                    | 3.15   | 4          |
| 165.0              | 164.0 / 167.0     | 13               | 34    | 124068     | 115  | 185  | 211  | 262  | 2 x M12    | 10                    | 3.25   | 4          |
| 168.3              | 167.0 / 170.0     | 13               | 34    | 126855     | 115  | 189  | 214  | 265  | 2 x M12    | 10                    | 3.40   | 4          |
| 170.0              | 169.0 / 172.0     | 13               | 34    | 129431     | 115  | 190  | 216  | 266  | 2 x M12    | 10                    | 3.41   | 4          |

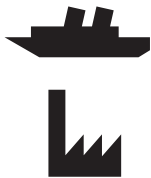
# Axilock Dimensions



| D1<br>Pipe<br>O.D. | O.D.<br>Tolerance | Working Pressure                                                                        |                                                                                         | Axial Pull | W1   | D2   | D3   | D4   | Screw Size | Hex Socket<br>Adaptor | Weight | Box<br>Qty |
|--------------------|-------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------|------|------|------|------|------------|-----------------------|--------|------------|
| (mm)               | (mm)              |  (bar) |  (bar) | (N)        | (mm) | (mm) | (mm) | (mm) |            | (mm)                  | KG     |            |
| 141.3              | 140.5 / 143.5     | 16                                                                                      | 42                                                                                      | 100393     | 116  | 165  | 189  | 244  | 2 x M12    | 10                    | 4.4    | 5          |
| 144.0              | 143.0 / 146.0     | 16                                                                                      | 42                                                                                      | 104266     | 116  | 167  | 192  | 246  | 2 x M12    | 10                    | 4.4    | 4          |
| 154.0              | 153.0 / 156.0     | 16                                                                                      | 42                                                                                      | 119251     | 116  | 177  | 202  | 255  | 2 x M12    | 10                    | 4.5    | 4          |
| 159.0              | 158.0 / 161.0     | 16                                                                                      | 42                                                                                      | 127120     | 118  | 184  | 210  | 287  | 2 x M16    | 14                    | 4.6    | 4          |
| 165.0              | 164.0 / 167.0     | 16                                                                                      | 42                                                                                      | 136895     | 118  | 190  | 216  | 292  | 2 x M16    | 14                    | 4.7    | 4          |
| 168.3              | 167.0 / 170.0     | 16                                                                                      | 42                                                                                      | 142425     | 118  | 194  | 219  | 294  | 2 x M16    | 14                    | 4.8    | 4          |
| 170.0              | 169.0 / 172.0     | 16                                                                                      | 42                                                                                      | 145317     | 118  | 195  | 221  | 296  | 2 x M16    | 14                    | 4.8    | 4          |
| 193.7              | 193.0 / 196.0     | 16                                                                                      | 42                                                                                      | 188860     | 119  | 220  | 246  | 315  | 2 x M16    | 14                    | 6.5    | 2          |
| 219.1              | 218.0 / 221.0     | 16                                                                                      | 42                                                                                      | 241382     | 120  | 245  | 272  | 337  | 2 x M16    | 14                    | 6.9    | 2          |
| 222.0              | 221.0 / 224.0     | 16                                                                                      | 42                                                                                      | 247814     | 120  | 248  | 275  | 339  | 2 x M16    | 14                    | 6.9    | 2          |
| 244.5              | 243.5 / 246.5     | 8.75                                                                                    | 23                                                                                      | 164386     | 120  | 271  | 297  | 358  | 2 x M16    | 14                    | 7.2    | *          |
| 267.0              | 266.0 / 269.0     | 8.75                                                                                    | 23                                                                                      | 196033     | 120  | 293  | 320  | 378  | 2 x M16    | 14                    | 7.5    | *          |
| 273.0              | 272.0 / 275.0     | 8.75                                                                                    | 23                                                                                      | 204943     | 120  | 299  | 326  | 383  | 2 x M16    | 14                    | 7.7    | *          |
| 323.9              | 323.0 / 326.0     | 7.5                                                                                     | 19                                                                                      | 247276     | 120  | 350  | 377  | 429  | 2 x M16    | 14                    | 9.5    | *          |
| 326.0              | 325.0 / 328.0     | 7.5                                                                                     | 19                                                                                      | 250493     | 120  | 352  | 379  | 431  | 2 x M16    | 14                    | 9.5    | *          |
| 355.6              | 354.5 / 357.5     | 6.0                                                                                     | 15                                                                                      | 238437     | 120  | 382  | 409  | 458  | 2 x M16    | 14                    | 10.25  | *          |
| 378.0              | 377.0 / 380.0     | 6.0                                                                                     | 15                                                                                      | 269423     | 120  | 404  | 431  | 479  | 2 x M16    | 14                    | 10.5   | *          |
| 406.4              | 405.0 / 408.0     | 6.0                                                                                     | 15                                                                                      | 311428     | 120  | 433  | 460  | 506  | 2 x M16    | 14                    | 12.0   | *          |
| 429.0              | 428.0 / 431.0     | 5.0                                                                                     | 15                                                                                      | 289191     | 120  | 455  | 482  | 527  | 2 x M16    | 14                    | 12.5   | *          |
| 457.2              | 456.0 / 459.0     |                                                                                         | 2.5                                                                                     | 164230     | 120  | 485  | 512  | 554  | 2 x M16    | 14                    | 13.3   | *          |
| 508.0              | 507.0 / 510.0     |                                                                                         | 2.5                                                                                     | 202753     | 120  | 535  | 563  | 603  | 2 x M16    | 14                    | 14.7   | *          |
| 558.8              | 558.0 / 561.0     |                                                                                         | 2.5                                                                                     | 245331     | 120  | 586  | 613  | 652  | 2 x M16    | 14                    | 16.2   | *          |
| 609.6              | 608.5 / 611.5     |                                                                                         | 1.5                                                                                     | 175178     | 120  | 637  | 664  | 701  | 2 x M16    | 14                    | 17.7   | *          |
| 660.4              | 659.5 / 662.5     |                                                                                         | 1.5                                                                                     | 205591     | 120  | 688  | 715  | 750  | 2 x M16    | 14                    | 19.2   | *          |
| 711.0              | 710.0 / 713.0     |                                                                                         | 1.5                                                                                     | 238437     | 120  | 739  | 766  | 799  | 2 x M16    | 14                    | 20.7   | *          |

## NOTES:

The above tables are guides to the most common sizes. Couplings to suit specific outside diameters not listed may be manufactured to order. Please contact us for further details.



Working pressure for marine applications. Minimum burst is 4 times working pressure. Figures are based on typical values for standard wall carbon steel pipe. For use on thin or soft pipe materials such as thin wall stainless, copper alloy or plastic (by way of example only) please check with us first.

Working pressure for industrial and land-based applications. Minimum burst is 1.5 times working pressure. Figures are based on typical values for standard wall carbon steel pipe. For use on thin or soft pipe materials such as thin wall stainless, copper alloy or plastic (by way of example only) please check with us first.

**Applicable Standards:** DIN 86128 Form G (axial restrained)  
ASTM F1476 Type II, Class 2 (flexible and restrained)

**Box Quantity:** Where marked \* the couplings are packed according to quantity ordered.

# Axilock-S & Axilock Applications



*Engine installations*

*Ship systems*

*Water industry*



*Building services*



# Axilock-FP and Axilock-FP Ultra



The Teekay Axilock-FP represents the ultimate in high security fire protected mechanical pipe couplings. With its unique internal fire sleeve and double casing design it is plain to see why this coupling is the primary pipe connection of choice in the marine and naval market sectors. The Axilock-FP has been tested to military standards for shock and fire resistance and is fully compliant with current IACS regulations.



## Material Selection

### Type I

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type II

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type IV

**Casing:** AISI 316L / DIN 1.4404  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

1.4462 Duplex casings and fasteners available on request.



- Type Approved by all the major marine classification bodies.
- Internal fire sleeve. No external "wraps." (Patented design).
- Robust design. Resistant to shock, vibration and fire (to Naval standards).
- Compliant with current IACS regulations, including pressure pulsation, vibration and minimum burst requirements.
- Fire tested to ISO 19921/19922
- VdS certificated.

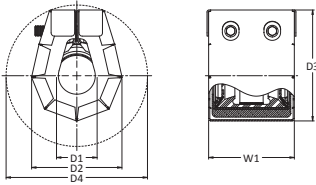
**Sizes:** Axilock-FP: 21.3 mm to 219.1 mm      Axilock-FP Ultra: 222.3 mm to 406.4 mm

**Gaskets:** EPDM -40°C to +100°C, NBR -20°C to +80°C, HNBR -20°C to +130°C, Viton -20°C to +250°C, Silicone -70°C to +270°C (*depending on grade*)

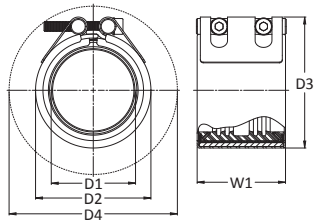
**Pipe Materials:** Carbon steel, stainless steel, copper, cunifer, GRE.

# Axilock-FP Dimensions

**TEEKAY**  
the pipe coupling

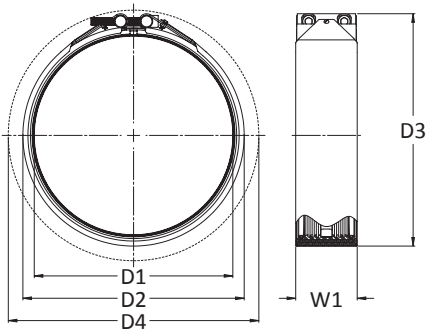


| D1<br>Pipe<br>O.D. | O.D.<br>Tolerance | Working Pressure |       | Axial Pull | W1   | D2   | D3   | D4   | Screw Size | Hex Socket<br>Adaptor | Weight | Box<br>Qty |
|--------------------|-------------------|------------------|-------|------------|------|------|------|------|------------|-----------------------|--------|------------|
| (mm)               | (mm)              | (bar)            | (bar) | (N)        | (mm) | (mm) | (mm) | (mm) |            | (mm)                  | KG     |            |
| 21.3               | 21.0 / 21.6       | 16               | 42    | 2281       | 54   | 46   | 65   | 77   | 2 x M6     | 5                     | 0.20   | 24         |
| 26.9               | 26.6 / 27.3       | 16               | 42    | 3638       | 54   | 52   | 70   | 80   | 2 x M6     | 5                     | 0.25   | 24         |
| 28.0               | 27.7 / 28.4       | 16               | 42    | 3942       | 54   | 53   | 72   | 81   | 2 x M6     | 5                     | 0.26   | 24         |
| 30.0               | 29.7 / 30.4       | 16               | 42    | 4525       | 54   | 55   | 74   | 82   | 2 x M6     | 5                     | 0.26   | 24         |
| 33.7               | 33.3 / 34.1       | 16               | 42    | 5710       | 54   | 58   | 77   | 84   | 2 x M6     | 5                     | 0.27   | 24         |
| 35.0               | 34.7 / 35.4       | 16               | 42    | 6160       | 54   | 60   | 79   | 85   | 2 x M6     | 5                     | 0.28   | 24         |



| D1<br>Pipe<br>O.D. | O.D.<br>Tolerance | Working Pressure |       | Axial Pull | W1   | D2   | D3   | D4   | Screw Size | Hex Socket<br>Adaptor | Weight | Box<br>Qty |
|--------------------|-------------------|------------------|-------|------------|------|------|------|------|------------|-----------------------|--------|------------|
| (mm)               | (mm)              | (bar)            | (bar) | (N)        | (mm) | (mm) | (mm) | (mm) |            | (mm)                  | KG     |            |
| 38.0               | 37.0 / 39.0       | 16               | 42    | 7260       | 87   | 67   | 82   | 151  | 2 x M8     | 6                     | 0.8    | 12         |
| 42.4               | 41.4 / 43.4       | 16               | 42    | 9040       | 87   | 71   | 86   | 154  | 2 x M8     | 6                     | 0.9    | 12         |
| 44.5               | 43.5 / 45.5       | 16               | 42    | 9957       | 87   | 73   | 89   | 155  | 2 x M8     | 6                     | 0.9    | 12         |
| 48.3               | 47.3 / 49.3       | 16               | 42    | 11730      | 87   | 77   | 92   | 157  | 2 x M8     | 6                     | 1.0    | 12         |
| 54.0               | 53.0 / 55.0       | 16               | 42    | 14662      | 87   | 83   | 98   | 161  | 2 x M8     | 6                     | 1.0    | 12         |
| 57.0               | 56.0 / 58.0       | 16               | 42    | 16337      | 87   | 86   | 101  | 163  | 2 x M8     | 6                     | 1.0    | 12         |
| 60.3               | 59.0 / 62.0       | 16               | 42    | 18283      | 87   | 89   | 105  | 165  | 2 x M8     | 6                     | 1.2    | 10         |
| 63.0               | 62.0 / 65.0       | 16               | 42    | 19957      | 87   | 92   | 108  | 167  | 2 x M8     | 6                     | 1.2    | 10         |
| 67.0               | 66.0 / 69.0       | 16               | 42    | 22572      | 87   | 96   | 111  | 170  | 2 x M8     | 6                     | 1.2    | 10         |
| 70.0               | 69.0 / 72.0       | 16               | 42    | 24639      | 87   | 100  | 116  | 172  | 2 x M8     | 6                     | 1.2    | 10         |
| 73.0               | 72.0 / 75.0       | 16               | 42    | 26796      | 87   | 101  | 117  | 173  | 2 x M8     | 6                     | 1.3    | 10         |
| 76.1               | 75.0 / 78.0       | 16               | 42    | 29120      | 88   | 104  | 123  | 188  | 2 x M10    | 8                     | 1.3    | 10         |
| 82.5               | 81.5 / 84.5       | 16               | 42    | 34224      | 88   | 111  | 129  | 193  | 2 x M10    | 8                     | 1.3    | 10         |
| 84.0               | 83.0 / 86.0       | 16               | 42    | 35749      | 88   | 112  | 131  | 194  | 2 x M10    | 8                     | 1.3    | 10         |
| 88.9               | 88.0 / 91.0       | 16               | 42    | 39739      | 88   | 117  | 136  | 198  | 2 x M10    | 8                     | 1.4    | 10         |
| 98.0               | 97.0 / 100.0      | 16               | 42    | 48291      | 88   | 125  | 144  | 206  | 2 x M10    | 8                     | 1.8    | 10         |
| 101.6              | 100.5 / 103.5     | 16               | 42    | 51905      | 114  | 128  | 147  | 216  | 2 x M10    | 8                     | 2.3    | 10         |
| 104.0              | 103.0 / 106.0     | 16               | 42    | 54386      | 114  | 131  | 149  | 218  | 2 x M10    | 8                     | 2.3    | 10         |
| 108.0              | 107.0 / 110.0     | 16               | 42    | 58650      | 114  | 134  | 153  | 221  | 2 x M10    | 8                     | 2.4    | 10         |
| 110.0              | 109.0 / 112.0     | 16               | 42    | 60842      | 114  | 136  | 156  | 223  | 2 x M10    | 8                     | 2.5    | 10         |
| 114.3              | 113.0 / 116.0     | 16               | 42    | 65692      | 114  | 141  | 159  | 226  | 2 x M10    | 8                     | 2.5    | 8          |
| 118.0              | 117.0 / 120.0     | 16               | 42    | 70014      | 114  | 145  | 163  | 230  | 2 x M10    | 8                     | 2.6    | 8          |
| 127.0              | 126.0 / 129.0     | 16               | 42    | 81101      | 114  | 155  | 175  | 236  | 2 x M10    | 8                     | 2.7    | 4          |
| 129.0              | 128.0 / 131.0     | 16               | 42    | 83675      | 114  | 157  | 177  | 238  | 2 x M12    | 10                    | 3.8    | 4          |
| 133.0              | 132.0 / 135.0     | 16               | 42    | 88945      | 115  | 161  | 186  | 241  | 2 x M12    | 10                    | 3.9    | 4          |
| 139.7              | 139.0 / 142.0     | 16               | 42    | 98132      | 115  | 168  | 193  | 247  | 2 x M12    | 10                    | 4.0    | 4          |
| 141.3              | 140.5 / 143.5     | 16               | 42    | 100393     | 115  | 170  | 194  | 248  | 2 x M12    | 10                    | 4.0    | 4          |
| 144.0              | 143.0 / 146.0     | 16               | 42    | 104266     | 115  | 173  | 197  | 251  | 2 x M12    | 10                    | 4.0    | 4          |
| 154.0              | 153.0 / 156.0     | 16               | 42    | 119251     | 115  | 183  | 207  | 261  | 2 x M12    | 10                    | 4.2    | 4          |
| 159.0              | 158.0 / 161.0     | 16               | 42    | 127120     | 117  | 189  | 215  | 291  | 2 x M16    | 14                    | 5.0    | 4          |
| 165.0              | 164.0 / 167.0     | 16               | 42    | 136895     | 117  | 195  | 221  | 296  | 2 x M16    | 14                    | 5.1    | 4          |
| 168.3              | 167.0 / 170.0     | 16               | 42    | 142425     | 117  | 199  | 224  | 298  | 2 x M16    | 14                    | 5.2    | 4          |
| 170.0              | 169.0 / 172.0     | 16               | 42    | 145317     | 117  | 201  | 226  | 300  | 2 x M16    | 14                    | 5.2    | 4          |
| 193.7              | 193.0 / 196.0     | 12               | 31    | 141495     | 120  | 225  | 251  | 319  | 2 x M16    | 14                    | 6.5    | 2          |
| 219.1              | 218.0 / 221.0     | 12               | 31    | 181036     | 120  | 251  | 277  | 341  | 2 x M16    | 14                    | 6.8    | 2          |

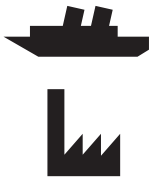
# Axilock-FP Ultra Dimensions



| D1<br>Pipe<br>O.D. | O.D.<br>Tolerance | Working Pressure                                                                        |                                                                                         | Axial Pull | W1    | D2    | D3   | D4   | Screw Size | Hex Socket<br>Adaptor | Weight | Box<br>Qty |
|--------------------|-------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------|-------|-------|------|------|------------|-----------------------|--------|------------|
| (mm)               | (mm)              |  (bar) |  (bar) | (N)        | (mm)  | (mm)  | (mm) | (mm) |            | (mm)                  | KG     |            |
| 222.3              | 221.0 / 224.0     | 12                                                                                      | 31                                                                                      | 186363     | 124.5 | 264   | 287  | 344  | 2 x M16    | 14                    | 8.0    | *          |
| 244.5              | 243.5 / 246.5     | 8.75                                                                                    | 23                                                                                      | 164386     | 124.5 | 287   | 309  | 366  | 2 x M16    | 14                    | 8.5    | *          |
| 267.0              | 266.0 / 268.0     | 8.75                                                                                    | 23                                                                                      | 196033     | 124.5 | 309   | 330  | 387  | 2 x M16    | 14                    | 9.0    | *          |
| 273.0              | 272.0 / 275.0     | 7.5                                                                                     | 19                                                                                      | 175665     | 124.5 | 315   | 338  | 395  | 2 x M16    | 14                    | 9.5    | *          |
| 323.9              | 323.0 / 326.0     | 7.5                                                                                     | 19                                                                                      | 247276     | 124.5 | 366   | 389  | 446  | 2 x M16    | 14                    | 10.0   | *          |
| 326.0              | 325.0 / 328.0     | 6                                                                                       | 15                                                                                      | 200394     | 124.5 | 368   | 391  | 448  | 2 x M16    | 14                    | 10.5   | *          |
| 355.6              | 354.5 / 357.5     | 6                                                                                       | 15                                                                                      | 238437     | 124.5 | 397.5 | 421  | 478  | 2 x M16    | 14                    | 11.0   | *          |
| 378.0              | 377.0 / 380.0     | 6                                                                                       | 15                                                                                      | 269423     | 124.5 | 420   | 443  | 500  | 2 x M16    | 14                    | 11.5   | *          |
| 406.4              | 405.0 / 408.0     | 5                                                                                       | 13                                                                                      | 259324     | 124.5 | 448   | 471  | 528  | 2 x M16    | 14                    | 12.0   | *          |

## NOTES:

The above tables are guides to the most common sizes. Couplings to suit specific outside diameters not listed may be manufactured to order. Please contact us for further details.



Working pressure for marine applications. Minimum burst is 4 times working pressure. Figures are based on typical values for standard wall carbon steel pipe. For use on thin or soft pipe materials such as thin wall stainless, copper alloy or plastic (by way of example only) please check with us first.

Working pressure for industrial and land-based applications. Minimum burst is 1.5 times working pressure. Figures are based on typical values for standard wall carbon steel pipe. For use on thin or soft pipe materials such as thin wall stainless, copper alloy or plastic (by way of example only) please check with us first.

**Applicable Standards:** DIN 86128 Form G (axial restrained)  
ASTM F1476 Type II, Class 2 (flexible and restrained)

**Box Quantity:** Where marked \* the couplings are packed according to quantity ordered.



For data values of VdS approved Axilock-FP couplings, please contact us.

# Axilock-S or Axilock-FP

## marine application guide



Marine applications guide to the use of Axilock-S / Axilock couplings  
and Axilock-FP / Axilock-FP Ultra

| Ship System                                      | Axilock-S & Axilock | Axilock-FP & Axilock-FP Ultra | Notes                                                                                                                                                                                                                                                |
|--------------------------------------------------|---------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Flammable Fluids (Flash Point ≤ 60°C)</b>     |                     |                               |                                                                                                                                                                                                                                                      |
| Cargo Oil Lines                                  | ✓                   | ✓                             | Axilock-FP must be used in pump rooms and on open decks.                                                                                                                                                                                             |
| Crude Oil Washing Lines                          | ✓                   | ✓                             | Axilock-FP must be used in pump rooms and on open decks.                                                                                                                                                                                             |
| Vent Lines                                       | X                   | ✓                             |                                                                                                                                                                                                                                                      |
| <b>Inert Gas</b>                                 |                     |                               |                                                                                                                                                                                                                                                      |
| Water Seal Effluent Lines                        | ✓                   | ✓                             |                                                                                                                                                                                                                                                      |
| Scrubber Effluent Lines                          | ✓                   | ✓                             |                                                                                                                                                                                                                                                      |
| Main Lines                                       | ✓                   | ✓                             | Neither type permitted in Category A machinery spaces or accommodation spaces. Other machinery spaces may be acceptable providing couplings are in easily visible and accessible locations. Axilock-FP must be used in pump rooms and on open decks. |
| Distribution Lines                               | ✓                   | ✓                             | Axilock-FP must be used in pump rooms and on open decks.                                                                                                                                                                                             |
| <b>Flammable Fluids (Flash Point &gt; 60 °C)</b> |                     |                               |                                                                                                                                                                                                                                                      |
| Cargo Oil Lines                                  | ✓                   | ✓                             | Axilock-FP must be used in pump rooms and on open decks.                                                                                                                                                                                             |
| Fuel Oil Lines                                   | X                   | ✓                             | Only Axilock-FP permitted but not in Category A machinery spaces or accommodation spaces. Other machinery spaces may be acceptable providing couplings are in easily visible and accessible locations.                                               |
| Lubricating Oil Lines                            | X                   | ✓                             | Only Axilock-FP permitted but not in Category A machinery spaces or accommodation spaces. Other machinery spaces may be acceptable providing couplings are in easily visible and accessible locations.                                               |
| Hydraulic Oil                                    | X                   | ✓                             | Only Axilock-FP permitted but not in Category A machinery spaces or accommodation spaces. Other machinery spaces may be acceptable providing couplings are in easily visible and accessible locations.                                               |
| Thermal Oil                                      | X                   | ✓                             | Only Axilock-FP permitted but not in Category A machinery spaces or accommodation spaces. Other machinery spaces may be acceptable providing couplings are in easily visible and accessible locations.                                               |
| <b>Seawater</b>                                  |                     |                               |                                                                                                                                                                                                                                                      |
| Bilge Lines                                      | ✓                   | ✓                             | Inside Category A machinery spaces only Axilock-FP is permitted (except LR – special rules apply).                                                                                                                                                   |
| Fire Main & Water Spray                          | X                   | ✓                             |                                                                                                                                                                                                                                                      |
| Foam System                                      | X                   | ✓                             |                                                                                                                                                                                                                                                      |
| Sprinkler System                                 | X                   | ✓                             |                                                                                                                                                                                                                                                      |
| Ballast System                                   | ✓                   | ✓                             | Inside Category A machinery spaces only Axilock-FP is permitted.                                                                                                                                                                                     |
| Cooling Water System                             | ✓                   | ✓                             | Inside Category A machinery spaces only Axilock-FP is permitted.                                                                                                                                                                                     |
| Tank Cleaning Services                           | ✓                   | ✓                             |                                                                                                                                                                                                                                                      |
| Non-Essential Systems                            | ✓                   | ✓                             |                                                                                                                                                                                                                                                      |
| <b>Fresh Water</b>                               |                     |                               |                                                                                                                                                                                                                                                      |
| Cooling Water Systems                            | ✓                   | ✓                             | Inside Category A machinery spaces only Axilock-FP is permitted.                                                                                                                                                                                     |
| Condensate Return                                | ✓                   | ✓                             | Inside Category A machinery spaces only Axilock-FP is permitted.                                                                                                                                                                                     |
| Non-Essential System                             | ✓                   | ✓                             |                                                                                                                                                                                                                                                      |
| <b>Sanitary / Drains / Scuppers</b>              |                     |                               |                                                                                                                                                                                                                                                      |
| Deck Drains (Internal)                           | ✓                   | ✓                             | Use of couplings allowed only above freeboard deck.                                                                                                                                                                                                  |
| Sanitary Drains                                  | ✓                   | ✓                             |                                                                                                                                                                                                                                                      |
| <b>Sounding / Vent</b>                           |                     |                               |                                                                                                                                                                                                                                                      |
| Water Tanks / Dry Spaces                         | ✓                   | ✓                             |                                                                                                                                                                                                                                                      |
| Oil Tanks<br>(flash point > 60 °C)               | X                   | ✓                             | Only Axilock-FP permitted but not in Category A machinery spaces or accommodation spaces. Other machinery spaces may be acceptable providing couplings are in easily visible and accessible locations.                                               |
| <b>Miscellaneous</b>                             |                     |                               |                                                                                                                                                                                                                                                      |
| Service Air (Non-Essential)                      | ✓                   | ✓                             |                                                                                                                                                                                                                                                      |
| Brine                                            | ✓                   | ✓                             |                                                                                                                                                                                                                                                      |
| Steam                                            | ✓                   | ✓                             | Couplings must be restrained on the pipes and may be used on deck with a design pressure of 10 bar or less.                                                                                                                                          |

The above table is for guidance only. For full details and more information on allowances and limitations on marine installations see IACS UR P2 Table 7, available as a download from [www.iacs.org.uk](http://www.iacs.org.uk) or from the individual classification societies.

# Torque Tables

Please consult the table below for torque ratings on Axilock-S, Axilock and Axilock-FP couplings. All couplings have the torque rating printed on the label. Torques are based on standard pipe properties. Torques may be adjusted up or down according to wall thickness and/or material hardness.

| D1<br>Pipe O.D. | Axilock-S<br>Torque (NM) |                 |      | Axilock<br>Torque (NM) |                 |      | Axilock-FP<br>Torque (NM) |                 |      |     |
|-----------------|--------------------------|-----------------|------|------------------------|-----------------|------|---------------------------|-----------------|------|-----|
|                 | Steel                    | Stainless Steel | CuNi | Steel                  | Stainless Steel | CuNi | Steel                     | Stainless Steel | CuNi | Vds |
| 21.3            | 8                        | 8               | 8    |                        |                 |      | 8                         | 8               | 8    |     |
| 26.9            | 8                        | 8               | 8    |                        |                 |      | 8                         | 8               | 8    |     |
| 28.0            | 8                        | 8               | 8    |                        |                 |      | 8                         | 8               | 8    |     |
| 30.0            | 8                        | 8               | 8    |                        |                 |      | 8                         | 8               | 8    |     |
| 33.7            | 8                        | 8               | 8    |                        |                 |      | 8                         | 8               | 8    |     |
| 35.0            | 8                        | 8               | 8    |                        |                 |      | 8                         | 8               | 8    |     |
| 38.0            | 15                       | 15              | 10   |                        |                 |      | 15                        | 15              | 10   | 30  |
| 42.4            | 15                       | 15              | 10   |                        |                 |      | 15                        | 15              | 10   |     |
| 44.5            | 15                       | 15              | 10   |                        |                 |      | 15                        | 15              | 10   |     |
| 48.3            | 15                       | 15              | 10   |                        |                 |      | 15                        | 15              | 10   | 30  |
| 54.0            | 15                       | 15              | 10   |                        |                 |      | 15                        | 15              | 10   |     |
| 57.0            | 15                       | 15              | 10   |                        |                 |      | 15                        | 15              | 10   |     |
| 60.3            | 15                       | 15              | 15   |                        |                 |      | 20                        | 20              | 20   | 30  |
| 63.0            | 15                       | 15              | 15   |                        |                 |      | 20                        | 20              | 20   |     |
| 67.0            | 15                       | 15              | 15   |                        |                 |      | 20                        | 20              | 20   |     |
| 70.0            | 15                       | 15              | 15   |                        |                 |      | 20                        | 20              | 20   |     |
| 73.0            | 15                       | 15              | 15   |                        |                 |      | 20                        | 20              | 20   |     |
| 76.1            | 20                       | 20              | 20   |                        |                 |      | 30                        | 30              | 25   | 30  |
| 82.5            | 20                       | 20              | 20   |                        |                 |      | 30                        | 30              | 25   |     |
| 84.0            | 20                       | 20              | 20   |                        |                 |      | 30                        | 30              | 25   |     |
| 88.9            | 20                       | 20              | 20   |                        |                 |      | 30                        | 30              | 25   | 45  |
| 98.0            | 25                       | 25              | 25   |                        |                 |      | 30                        | 30              | 25   |     |
| 101.6           | 25                       | 25              | 25   |                        |                 |      | 45                        | 45              | 30   |     |
| 104.0           | 25                       | 25              | 25   |                        |                 |      | 45                        | 45              | 30   |     |
| 108.0           | 25                       | 25              | 25   |                        |                 |      | 45                        | 45              | 30   | 80  |
| 110.0           | 25                       | 25              | 25   |                        |                 |      | 45                        | 45              | 30   |     |
| 114.3           | 30                       | 30              | 30   |                        |                 |      | 45                        | 45              | 30   | 80  |
| 118.0           | 30                       | 30              | 30   |                        |                 |      | 45                        | 45              | 30   |     |
| 127.0           | 30                       | 30              | 30   |                        |                 |      | 45                        | 45              | 30   |     |
| 129.0           | 30                       | 30              | 30   |                        |                 |      | 65                        | 65              | 30   |     |
| 133.0           | 35                       | 35              | 35   |                        |                 |      | 65                        | 65              | 35   | 120 |
| 139.7           | 35                       | 35              | 35   |                        |                 |      | 65                        | 65              | 35   | 120 |
| 141.3           | 35                       | 35              | 35   | 65                     | 65              | 35   | 65                        | 65              | 35   |     |
| 144.0           | 35                       | 35              | 35   | 65                     | 65              | 35   | 65                        | 65              | 35   |     |
| 154.0           | 50                       | 50              | 35   | 65                     | 65              | 35   | 65                        | 65              | 35   |     |
| 159.0           | 50                       | 50              | 35   | 85                     | 85              | 35   | 85                        | 85              | 35   | 150 |
| 165.0           | 50                       | 50              | 35   | 85                     | 85              | 35   | 85                        | 85              | 35   |     |
| 168.3           | 50                       | 50              | 35   | 85                     | 85              | 35   | 85                        | 85              | 35   | 150 |
| 170.0           | 50                       | 50              | 35   | 85                     | 85              | 35   | 85                        | 85              | 35   |     |
| 193.7           |                          |                 |      | 90                     | 90              | 50   | 90                        | 90              | 50   |     |
| 219.1           |                          |                 |      | 100                    | 100             | 50   | 100                       | 100             | 50   |     |
| 222.0           |                          |                 |      | 100                    | 100             | 65   |                           |                 |      |     |
| 244.5           |                          |                 |      | 100                    | 100             | 65   |                           |                 |      |     |
| 267.0           |                          |                 |      | 100                    | 100             | 65   |                           |                 |      |     |
| 273.0           |                          |                 |      | 110                    | 110             | 65   |                           |                 |      |     |
| 323.9           |                          |                 |      | 110                    | 110             | 65   |                           |                 |      |     |
| 326.0           |                          |                 |      | 110                    | 110             | 65   |                           |                 |      |     |
| 355.6           |                          |                 |      | 120                    | 120             | 65   |                           |                 |      |     |
| 378.0           |                          |                 |      | 120                    | 120             | 65   |                           |                 |      |     |
| 406.4           |                          |                 |      | 140                    | 140             | 65   |                           |                 |      |     |



The Teekay Axiflex is a high performance coupling that allows generous pipe angulation and expansion/contraction. The Axiflex is a popular choice of coupling with water authorities, civil engineers and building contractors and is available in sizes up to 4.2m in diameter.

The stainless steel and high strength steel designs ensure significant weight savings are achieved over cast iron couplings. The result is less manpower, quicker installation times and massive cost savings.

## Material Selection

### Type I

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type II

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type IV

**Casing:** AISI 316L / DIN 1.4404  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type V

**Casing:** High strength steel  
**Coating:** Rilsan/PVC/  
 Epoxy/Galvanized  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type VI

**Casing:** High strength steel  
**Coating:** Rilsan/PVC/  
 Epoxy/Galvanized  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ



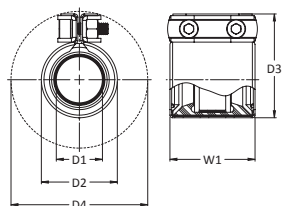
**Sizes:** 21.3 mm to 4200.0 mm

**Gaskets:** EPDM -40°C to +100°C, NBR -20°C to +80°C, HNBR -20°C to +130°C, Viton -20°C to +250°C, Silicone -70°C to +270°C (depending on grade)

**Pipe Materials:** Carbon steel, cast and ductile iron, stainless steel, copper, cunifer, GRP, asbestos cement, HDPE, MDPE, PVC, uPVC, ABS

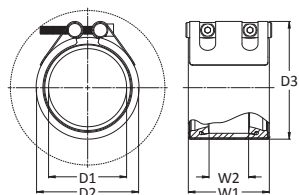
1.4462 Duplex casings and fasteners available on request.

# Axiflex Dimensions



## 45 mm wide

| D1<br>Pipe<br>O.D. | O.D.<br>Tolerance | Working Pressure<br>Available in the<br>following PN ratings: | W1   | D2   | D3   | D4   | Screw<br>Size | Hex Socket<br>Adaptor | Weight |
|--------------------|-------------------|---------------------------------------------------------------|------|------|------|------|---------------|-----------------------|--------|
| (mm)               | (mm)              |                                                               | (mm) | (mm) | (mm) | (mm) |               | (mm)                  | KG     |
| 21.3               | 21.0 / 21.6       | 16 / 25 / 40                                                  | 45   | 34   | 50   | 77   | 2 x M6        | 5                     | 0.15   |
| 26.9               | 26.6 / 27.3       | 16 / 25 / 40                                                  | 45   | 39   | 56   | 83   | 2 x M6        | 5                     | 0.16   |
| 28.0               | 27.7 / 28.4       | 16 / 25 / 40                                                  | 45   | 41   | 57   | 84   | 2 x M6        | 5                     | 0.16   |
| 30.0               | 29.7 / 30.4       | 16 / 25 / 40                                                  | 45   | 42   | 59   | 86   | 2 x M6        | 5                     | 0.17   |
| 33.7               | 33.3 / 34.1       | 16 / 25 / 40                                                  | 45   | 46   | 63   | 90   | 2 x M6        | 5                     | 0.17   |
| 35.0               | 34.7 / 35.4       | 16 / 25 / 40                                                  | 45   | 48   | 64   | 91   | 2 x M6        | 5                     | 0.18   |

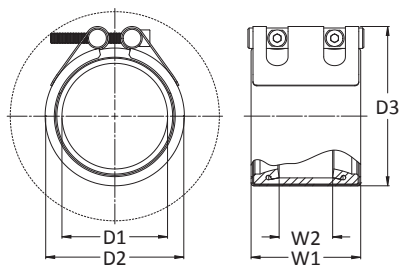


## 65 mm wide

| D1<br>Pipe<br>O.D. | O.D.<br>Tolerance | Working Pressure<br>Available in the<br>following PN ratings: | W1   | W2   | D2   | D3   | Screw<br>Size | Hex Socket<br>Adaptor | Weight |
|--------------------|-------------------|---------------------------------------------------------------|------|------|------|------|---------------|-----------------------|--------|
| (mm)               | (mm)              |                                                               | (mm) | (mm) | (mm) | (mm) |               | (mm)                  | KG     |
| 38.0               | 37.0 / 39.0       | 16 / 25 / 40                                                  | 65   | 10   | 57   | 70   | 2 x M8        | 6                     | 0.4    |
| 42.4               | 41.4 / 43.4       | 16 / 25 / 40                                                  | 65   | 10   | 63   | 75   | 2 x M8        | 6                     | 0.4    |
| 44.5               | 43.5 / 45.5       | 16 / 25 / 40                                                  | 65   | 10   | 65   | 77   | 2 x M8        | 6                     | 0.4    |

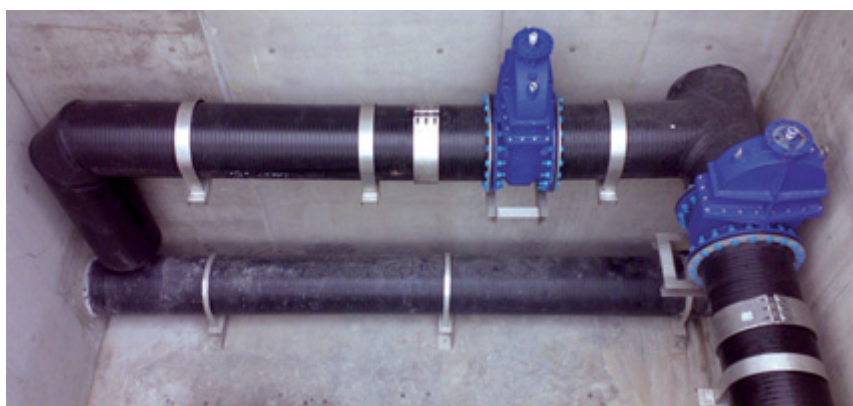
## 85 mm wide

| D1<br>Pipe<br>O.D. | O.D.<br>Tolerance | Working Pressure<br>Available in the<br>following PN ratings: | W1   | W2   | D2   | D3   | Screw<br>Size | Hex Socket<br>Adaptor | Weight |
|--------------------|-------------------|---------------------------------------------------------------|------|------|------|------|---------------|-----------------------|--------|
| (mm)               | (mm)              |                                                               | (mm) | (mm) | (mm) | (mm) |               | (mm)                  | KG     |
| 48.3               | 47.0 / 50.0       | 16 / 25 / 40                                                  | 85   | 42   | 70   | 87   | 2 x M8        | 6                     | 1.0    |
| 54.0               | 52.5 / 55.5       | 16 / 25 / 40                                                  | 85   | 42   | 74   | 93   | 2 x M8        | 6                     | 1.0    |
| 57.0               | 55.5 / 58.5       | 16 / 25 / 40                                                  | 85   | 42   | 77   | 96   | 2 x M8        | 6                     | 1.1    |
| 60.3               | 59.0 / 62.0       | 16 / 25 / 40                                                  | 85   | 42   | 80   | 99   | 2 x M8        | 6                     | 1.1    |
| 63.0               | 62.0 / 65.0       | 16 / 25 / 40                                                  | 85   | 42   | 83   | 102  | 2 x M8        | 6                     | 1.1    |
| 67.0               | 65.5 / 68.5       | 16 / 25 / 40                                                  | 85   | 42   | 87   | 106  | 2 x M8        | 6                     | 1.2    |
| 70.0               | 68.5 / 71.5       | 16 / 25 / 40                                                  | 85   | 42   | 90   | 109  | 2 x M8        | 6                     | 1.2    |
| 73.0               | 71.5 / 74.5       | 16 / 25 / 40                                                  | 85   | 42   | 93   | 112  | 2 x M8        | 6                     | 1.3    |
| 76.1               | 74.0 / 78.0       | 16 / 25 / 40                                                  | 85   | 42   | 96   | 115  | 2 x M8        | 6                     | 1.3    |
| 82.5               | 80.5 / 84.5       | 16 / 25 / 40                                                  | 85   | 42   | 103  | 122  | 2 x M8        | 6                     | 1.4    |
| 84.0               | 82.0 / 86.0       | 16 / 25 / 40                                                  | 85   | 42   | 104  | 123  | 2 x M8        | 6                     | 1.4    |
| 88.9               | 87.0 / 91.0       | 16 / 25 / 40                                                  | 85   | 42   | 109  | 128  | 2 x M8        | 6                     | 1.5    |
| 98.0               | 96.0 / 100.0      | 16 / 25 / 40                                                  | 85   | 42   | 118  | 137  | 2 x M8        | 6                     | 1.5    |
| 101.6              | 100.0 / 104.0     | 16 / 25 / 40                                                  | 85   | 42   | 122  | 141  | 2 x M8        | 6                     | 1.6    |
| 104.0              | 102.0 / 106.0     | 16 / 25 / 40                                                  | 85   | 42   | 124  | 143  | 2 x M8        | 6                     | 1.6    |
| 108.0              | 106.0 / 110.0     | 16 / 25 / 40                                                  | 85   | 42   | 128  | 147  | 2 x M8        | 6                     | 1.6    |
| 110.0              | 108.0 / 112.0     | 16 / 25 / 40                                                  | 85   | 42   | 130  | 149  | 2 x M8        | 6                     | 1.6    |
| 114.3              | 112.0 / 116.0     | 16 / 25 / 40                                                  | 85   | 42   | 134  | 153  | 2 x M8        | 6                     | 1.6    |
| 118.0              | 116.0 / 120.0     | 16 / 25 / 40                                                  | 85   | 42   | 138  | 157  | 2 x M8        | 6                     | 1.7    |



**110 mm wide**

| D1<br>Pipe<br>O.D. | O.D.<br>Tolerance | Working Pressure<br>Available in the<br>following PN ratings: | W1   | W2   | D2   | D3   | Screw<br>Size | Hex Socket<br>Adaptor | Weight |
|--------------------|-------------------|---------------------------------------------------------------|------|------|------|------|---------------|-----------------------|--------|
| (mm)               | (mm)              |                                                               | (mm) | (mm) | (mm) | (mm) |               | (mm)                  | KG     |
| 88.9               | 87.0 / 91.0       | 16 / 25 / 40                                                  | 110  | 67   | 111  | 133  | 2 x M10       | 8                     | 2.0    |
| 98.0               | 96.0 / 100.0      | 16 / 25 / 40                                                  | 110  | 67   | 120  | 142  | 2 x M10       | 8                     | 2.0    |
| 101.6              | 100.0 / 104.0     | 16 / 25 / 40                                                  | 110  | 67   | 124  | 146  | 2 x M10       | 8                     | 2.0    |
| 104.0              | 102.0 / 106.0     | 16 / 25 / 40                                                  | 110  | 67   | 126  | 148  | 2 x M10       | 8                     | 2.0    |
| 108.0              | 106.0 / 110.0     | 16 / 25 / 40                                                  | 110  | 67   | 130  | 152  | 2 x M10       | 8                     | 2.0    |
| 110.0              | 108.0 / 112.0     | 16 / 25 / 40                                                  | 110  | 67   | 132  | 154  | 2 x M10       | 8                     | 2.0    |
| 114.3              | 112.0 / 116.0     | 16 / 25 / 40                                                  | 110  | 67   | 136  | 158  | 2 x M10       | 8                     | 2.0    |
| 118.0              | 116.0 / 120.0     | 16 / 25 / 40                                                  | 110  | 67   | 140  | 162  | 2 x M10       | 8                     | 2.0    |
| 127.0              | 125.0 / 129.0     | 16 / 25 / 40                                                  | 110  | 67   | 149  | 171  | 2 x M10       | 8                     | 2.2    |
| 129.0              | 127.0 / 131.0     | 16 / 25 / 40                                                  | 110  | 67   | 151  | 173  | 2 x M10       | 8                     | 2.2    |
| 133.0              | 131.0 / 135.0     | 16 / 25 / 40                                                  | 110  | 67   | 155  | 177  | 2 x M10       | 8                     | 2.3    |
| 139.7              | 138.0 / 142.0     | 16 / 25 / 40                                                  | 110  | 67   | 162  | 184  | 2 x M10       | 8                     | 2.3    |
| 141.3              | 139.0 / 143.0     | 16 / 25 / 40                                                  | 110  | 67   | 163  | 186  | 2 x M10       | 8                     | 2.3    |
| 144.0              | 142.0 / 146.0     | 16 / 25 / 40                                                  | 110  | 67   | 166  | 188  | 2 x M10       | 8                     | 2.3    |
| 154.0              | 151.0 / 156.0     | 16                                                            | 110  | 67   | 176  | 198  | 2 x M10       | 8                     | 2.4    |
| 159.0              | 156.0 / 161.0     | 16                                                            | 110  | 67   | 181  | 203  | 2 x M10       | 8                     | 2.5    |
| 165.0              | 162.0 / 167.0     | 16                                                            | 110  | 67   | 187  | 209  | 2 x M10       | 8                     | 2.5    |
| 168.3              | 165.0 / 170.0     | 16                                                            | 110  | 67   | 190  | 212  | 2 x M10       | 8                     | 2.5    |
| 170.0              | 167.0 / 172.0     | 16                                                            | 110  | 67   | 192  | 214  | 2 x M10       | 8                     | 2.5    |
| 193.7              | 191.0 / 197.0     | 16                                                            | 110  | 67   | 216  | 238  | 2 x M10       | 8                     | 2.8    |
| 219.1              | 216.0 / 222.0     | 16                                                            | 110  | 67   | 242  | 263  | 2 x M10       | 8                     | 3.2    |
| 222.0              | 218.0 / 224.0     | 16                                                            | 110  | 67   | 244  | 266  | 2 x M10       | 8                     | 3.2    |
| 244.5              | 241.0 / 247.0     | 16                                                            | 110  | 67   | 267  | 289  | 2 x M10       | 8                     | 3.3    |
| 267.0              | 264.0 / 270.0     | 16                                                            | 110  | 67   | 289  | 311  | 2 x M10       | 8                     | 3.5    |
| 273.0              | 270.0 / 276.0     | 16                                                            | 110  | 67   | 295  | 317  | 2 x M10       | 8                     | 3.5    |
| 323.9              | 321.0 / 327.0     | 10                                                            | 110  | 67   | 346  | 368  | 2 x M10       | 8                     | 3.8    |
| 326.0              | 322.0 / 328.0     | 10                                                            | 110  | 67   | 348  | 370  | 2 x M10       | 8                     | 3.8    |

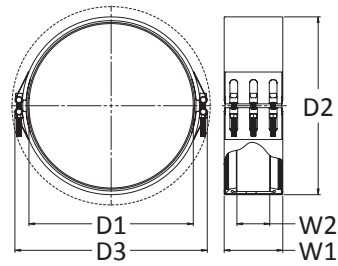
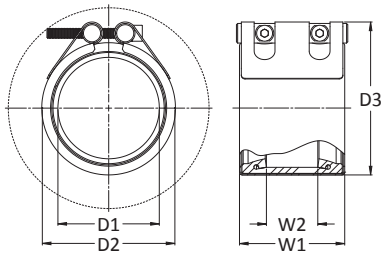


# Axiflex Dimensions

## 140 mm, 210 mm, 310 mm, 410 mm wide

| D1 Pipe O.D.                                                                                                                    | Pipe Nominal Bore | Available Coupling Widths: |        |        |        | Working Pressure Available in the following PN ratings: | W2                   | D2 Coupling O.D. = D1 (mm) + the following: |
|---------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|--------|--------|--------|---------------------------------------------------------|----------------------|---------------------------------------------|
|                                                                                                                                 | (mm)              | 140 mm                     | 210 mm | 310 mm | 410 mm |                                                         | (mm)                 | (mm)                                        |
| Teekay Axiflex couplings are available to suit any pipe O.D. up to 4200 mm. Please contact us with OD prior to order placement. | 150               | ●                          |        |        |        | 16 / 25 / 40                                            | 80                   | 22                                          |
|                                                                                                                                 | 200               | ●                          | ●      |        |        | 16 / 25 / 40                                            | 80 / 120             | 22 / 42                                     |
|                                                                                                                                 | 250               | ●                          | ●      |        |        | 16 / 25 / 40                                            | 80 / 120             | 22 / 42                                     |
|                                                                                                                                 | 300               | ●                          | ●      | ●      | ●      | 16 / 25 / 40                                            | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 350               | ●                          | ●      | ●      | ●      | 16 / 25 / 40                                            | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 400               | ●                          | ●      | ●      | ●      | 10 / 16 / 25                                            | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 450               | ●                          | ●      | ●      | ●      | 10 / 16 / 25                                            | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 500               | ●                          | ●      | ●      | ●      | 10 / 16 / 25                                            | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 600               | ●                          | ●      | ●      | ●      | 10 / 16 / 25                                            | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 700               | ●                          | ●      | ●      | ●      | 10 / 16 / 25                                            | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 800               | ●                          | ●      | ●      | ●      | 10 / 16 / 25                                            | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 900               | ●                          | ●      | ●      | ●      | 6 / 10 / 16                                             | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 1000              | ●                          | ●      | ●      | ●      | 6 / 10 / 16                                             | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 1100              | ●                          | ●      | ●      | ●      | 6 / 10 / 16                                             | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 1200              | ●                          | ●      | ●      | ●      | 6 / 10 / 16                                             | 80 / 120 / 220 / 320 | 28 / 42 / 42 / 42                           |
|                                                                                                                                 | 1300              |                            | ●      | ●      | ●      | 6 / 10 / 16                                             | 120 / 220 / 320      | 42 / 42 / 42                                |
|                                                                                                                                 | 1400              |                            | ●      | ●      | ●      | 6 / 10 / 16                                             | 120 / 220 / 320      | 42 / 42 / 42                                |
|                                                                                                                                 | 1500              |                            | ●      | ●      | ●      | 2.5 / 6 / 10                                            | 120 / 220 / 320      | 42 / 42 / 42                                |
|                                                                                                                                 | 1600              |                            | ●      | ●      | ●      | 2.5 / 6 / 10                                            | 120 / 220 / 320      | 42 / 42 / 42                                |
|                                                                                                                                 | 1700              |                            | ●      | ●      | ●      | 2.5 / 6 / 10                                            | 120 / 220 / 320      | 42 / 42 / 42                                |
|                                                                                                                                 | 1800              |                            | ●      | ●      | ●      | 2.5 / 6 / 10                                            | 120 / 220 / 320      | 42 / 42 / 42                                |
|                                                                                                                                 | 1900              |                            | ●      | ●      | ●      | 2.5 / 6 / 10                                            | 120 / 220 / 320      | 42 / 42 / 42                                |
|                                                                                                                                 | 2000              |                            | ●      | ●      | ●      | 2.5 / 6 / 10                                            | 120 / 220 / 320      | 42 / 42 / 42                                |
|                                                                                                                                 | 2100              |                            | ●      | ●      | ●      | 2.5 / 6                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 2200              |                            | ●      | ●      | ●      | 2.5 / 6                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 2300              |                            | ●      | ●      | ●      | 2.5 / 6                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 2400              |                            | ●      | ●      | ●      | 2.5 / 6                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 2500              |                            | ●      | ●      | ●      | 2.5 / 6                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 2600              |                            | ●      | ●      | ●      | 2.5 / 6                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 2700              |                            | ●      | ●      | ●      | 2.5 / 5                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 2800              |                            | ●      | ●      | ●      | 2.5 / 5                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 2900              |                            | ●      | ●      | ●      | 2.5 / 5                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 3000              |                            | ●      | ●      | ●      | 2.5 / 5                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 3200              |                            | ●      | ●      | ●      | 2.5 / 5                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 3400              |                            | ●      | ●      | ●      | 2.5 / 4                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 3600              |                            | ●      | ●      | ●      | 2.5 / 4                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 3800              |                            | ●      | ●      | ●      | 2.5 / 4                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 4000              |                            | ●      | ●      | ●      | 2.5 / 4                                                 | 120 / 220 / 320      | 102 / 102 / 102                             |
|                                                                                                                                 | 4200              |                            | ●      | ●      | ●      | 2.5                                                     | 120 / 220 / 320      | 102 / 102 / 102                             |

**NOTES:** The above tables are guides to the most common sizes. Couplings to suit specific outside diameters not listed may be manufactured to order. Please contact us for further details. Minimum burst is 1.5 times working pressure. Figures are based on typical values for standard wall carbon steel pipe. For use on thin or soft pipe materials such as thin wall stainless, copper alloy or plastic (by way of example only) please check with us first.



| D3 Overall Coupling O.D. =<br>D1 (mm) + the following: | Number of Screws  | Approximate Weight      | Maximal Allowable<br>Tolerance on Pipe O.D. +/- | Pipe<br>Nominal<br>Bore | D1<br>Pipe<br>O.D.                                                                                                              |
|--------------------------------------------------------|-------------------|-------------------------|-------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| (mm)                                                   |                   | (KG)                    | (mm)                                            | (mm)                    |                                                                                                                                 |
| 44                                                     | 2                 | 4.0                     | 2.5                                             | 150                     | Teekay Axiflex couplings are available to suit any pipe O.D. up to 4200 mm. Please contact us with OD prior to order placement. |
| 44 / 72                                                | 2 / 2 / 3         | 4.5 / 7.9               | 3 / 3                                           | 200                     |                                                                                                                                 |
| 44 / 72                                                | 2 / 2 / 3         | 5.0 / 8.6               | 3 / 3                                           | 250                     |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 2 / 3 / 4 / 6 | 6.0 / 9.7 / 17.3 / 22   | 4 / 5 / 5 / 5                                   | 300                     |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 2 / 3 / 4 / 6 | 7.1 / 10.7 / 18.4 / 24  | 4 / 5 / 5 / 5                                   | 350                     |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 2 / 3 / 4 / 6 | 8.0 / 12.9 / 20.1 / 26  | 4 / 5 / 5 / 5                                   | 400                     |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 2 / 3 / 4 / 6 | 9.0 / 14.0 / 21.8 / 29  | 4 / 5 / 5 / 5                                   | 450                     |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 2 / 3 / 4 / 6 | 9.5 / 16.1 / 26.6 / 32  | 4 / 5 / 5 / 5                                   | 500                     |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 2 / 3 / 4 / 6 | 11.0 / 17.3 / 30.5 / 39 | 4 / 6 / 6 / 6                                   | 600                     |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 3 / 4 / 6     | 12.5 / 22.5 / 34.4 / 44 | 4 / 6 / 6 / 6                                   | 700                     |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 3 / 4 / 6     | 14.4 / 25.1 / 38.4 / 49 | 4 / 6 / 6 / 6                                   | 800                     |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 3 / 4 / 6     | 15.8 / 27.6 / 42.3 / 55 | 4 / 6 / 6 / 6                                   | 900                     |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 3 / 4 / 6     | 16.8 / 30.2 / 46.2 / 60 | 4 / 6 / 6 / 6                                   | 1000                    |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 3 / 4 / 6     | 18.0 / 38.3 / 50.1 / 65 | 4 / 6 / 6 / 6                                   | 1100                    |                                                                                                                                 |
| 58 / 72 / 72 / 72                                      | 2 / 3 / 4 / 6     | 19.5 / 41.3 / 54.0 / 70 | 4 / 6 / 6 / 6                                   | 1200                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 6 / 8 / 12        | 47.7 / 63.9 / 83        | 10 / 10 / 10                                    | 1300                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 6 / 8 / 12        | 50.5 / 67.9 / 88        | 10 / 10 / 10                                    | 1400                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 6 / 8 / 12        | 53.2 / 71.8 / 93        | 10 / 10 / 10                                    | 1500                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 6 / 8 / 12        | 56.5 / 75.7 / 98        | 10 / 10 / 10                                    | 1600                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 6 / 8 / 12        | 59.8 / 79.6 / 103       | 10 / 10 / 10                                    | 1700                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 6 / 8 / 12        | 62.3 / 83.5 / 108       | 10 / 10 / 10                                    | 1800                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 64.0 / 85.0 / 113       | 10 / 10 / 10                                    | 1900                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 65.2 / 87.5 / 118       | 10 / 10 / 10                                    | 2000                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 68.1 / 91.4 / 138       | 10 / 10 / 20                                    | 2100                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 70.9 / 95.3 / 144       | 10 / 10 / 20                                    | 2200                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 73.9 / 99.2 / 148       | 10 / 10 / 20                                    | 2300                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 75.9 / 103.1 / 153      | 10 / 10 / 20                                    | 2400                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 79.8 / 118.4 / 156      | 10 / 10 / 20                                    | 2500                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 87.5 / 122.3 / 164      | 10 / 10 / 20                                    | 2600                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 92.9 / 126.3 / 169      | 10 / 10 / 20                                    | 2700                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 96.2 / 130.2 / 174      | 10 / 10 / 20                                    | 2800                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 98.7 / 134.1 / 179      | 10 / 10 / 20                                    | 2900                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 109.6 / 138.0 / 185     | 10 / 10 / 20                                    | 3000                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 128 / 164 / 204         | 10 / 20 / 20                                    | 3200                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 135 / 172 / 216         | 10 / 20 / 20                                    | 3400                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 18 / 24 / 36      | 148 / 191 / 236         | 10 / 20 / 20                                    | 3600                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 18 / 24 / 36      | 153 / 200 / 244         | 10 / 20 / 20                                    | 3800                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 18 / 24 / 36      | 159 / 207 / 254         | 10 / 20 / 20                                    | 4000                    |                                                                                                                                 |
| 102 / 102 / 102                                        | 18 / 24 / 36      | 166 / 216 / 265         | 10 / 20 / 20                                    | 4200                    |                                                                                                                                 |

Applicable Standards: DIN 86128 Form F (non axial restrained)  
ASTM F1476 Type II, Class 3 (flexible and unrestrained)

# Repair Clamp



The Teekay Repair Clamp is the budget repair coupling of choice. Featuring “cut flanges” on the underside of the fitting, this type of coupling can be easily pulled around a leaking pipe to seal a fracture. Once wrapped around the pipe, the fitter then goes about installing the coupling in the same manner as any other Teekay coupling.

Suitable for emergency repairs in buildings and industrial units to avoid costly reinstatement work caused by water damage. The Teekay Repair Clamp represents excellent value for money both at point of order and at point of use, as significant installation time savings can be achieved with the light-weight stainless steel design.

## Material Selection

### Type I

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type II

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type IV

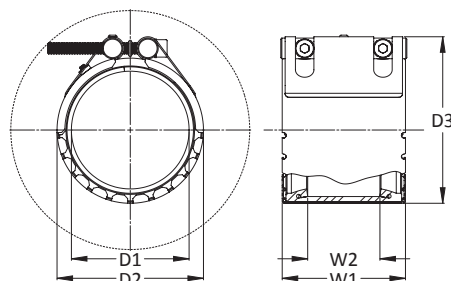
**Casing:** AISI 316L / DIN 1.4404  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

1.4462 Duplex casings and fasteners available on request.

**Sizes:** 48.3 mm to 323.9 mm

**Gaskets:** EPDM -40°C to +100°C, NBR -20°C to +80°C, HNBR -20°C to +130°C, Viton -20°C to +250°C, Silicone -70°C to +270°C (*depending on grade*)

**Pipe Materials:** Carbon steel, cast and ductile iron, stainless steel, copper, cunifer, GRP, asbestos cement, HDPE, MDPE, PVC, uPVC, ABS



### NOTES:

The table below is a guide to the most common sizes. Couplings to suit specific outside diameters not listed may be manufactured to order. Please contact us for further details.

Minimum burst is 1.5 times working pressure. Figures are based on typical values for standard wall carbon steel pipe. For use on thin or soft pipe materials such as thin wall stainless, copper alloy or plastic (by way of example only) please check with us first.

| D1<br>Pipe<br>O.D.                                                                                                                                      | Pipe<br>Nominal<br>Bore |       | W1   | W2   | D2 Coupling O.D. =<br>D1 (mm)<br>+ the following: | D3 Overall Coupling O.D. =<br>D1 (mm)<br>+ the following: | No. of<br>Screws | Approximate<br>Weight | Maximum Allowable<br>Tolerance on Pipe O.D.<br>+/- |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------|------|------|---------------------------------------------------|-----------------------------------------------------------|------------------|-----------------------|----------------------------------------------------|
| Teekay Repair Clamps are<br>available to suit any pipe O.D.<br>from 48.3 mm up to 323.9 mm.<br>Please contact us with O.D.<br>prior to order placement. | (mm)                    | (bar) | (mm) | (mm) | (mm)                                              | (mm)                                                      |                  | (kg)                  | (mm)                                               |
|                                                                                                                                                         | 40                      | 16    | 85   | 42   | 20                                                | 39                                                        | 2 x M8           | 1                     | 1                                                  |
|                                                                                                                                                         | 50                      | 16    | 85   | 42   | 20                                                | 39                                                        | 2 x M8           | 1.1                   | 1                                                  |
|                                                                                                                                                         | 65                      | 16    | 85   | 42   | 20                                                | 39                                                        | 2 x M8           | 1.3                   | 1                                                  |
|                                                                                                                                                         | 80                      | 16    | 85   | 42   | 20                                                | 39                                                        | 2 x M8           | 1.5                   | 1                                                  |
|                                                                                                                                                         | 100                     | 16    | 85   | 42   | 20                                                | 39                                                        | 2 x M8           | 1.6                   | 1                                                  |
|                                                                                                                                                         | 150                     | 16    | 110  | 67   | 22                                                | 44                                                        | 2 x M10          | 2.5                   | 2                                                  |
|                                                                                                                                                         | 200                     | 12    | 110  | 67   | 22                                                | 44                                                        | 2 x M10          | 3.2                   | 2                                                  |
|                                                                                                                                                         | 250                     | 6     | 110  | 67   | 22                                                | 44                                                        | 2 x M10          | 3.5                   | 2                                                  |
|                                                                                                                                                         | 300                     | 6     | 110  | 67   | 22                                                | 44                                                        | 2 x M10          | 3.8                   | 2                                                  |

Teekay Repair Clamps are available to suit any pipe O.D. from 48.3 mm up to 323.9 mm. Please contact us with O.D. prior to order placement.



The Teekay Repair Coupling is ideal for all situations where you need to make a permanent repair under pressure. Simply open up the coupling, wrap it around the pipe and fasten – you have repaired the pipeline in minutes and avoided the need for costly downtime.

The Repair Coupling comes with no loose parts and features our standard gasket which actively seals onto the pipe. The range is available up to 3000 mm OD and in widths up to 410 mm wide. The Teekay Repair Coupling is used throughout the water, process, oil & gas and marine industries.

## Material Selection

### Type I

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type II

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type IV

**Casing:** AISI 316L / DIN 1.4404  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type V

**Casing:** High strength steel  
**Coating:** Rilsan/PVC/  
Epoxy/Galvanized  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type VI

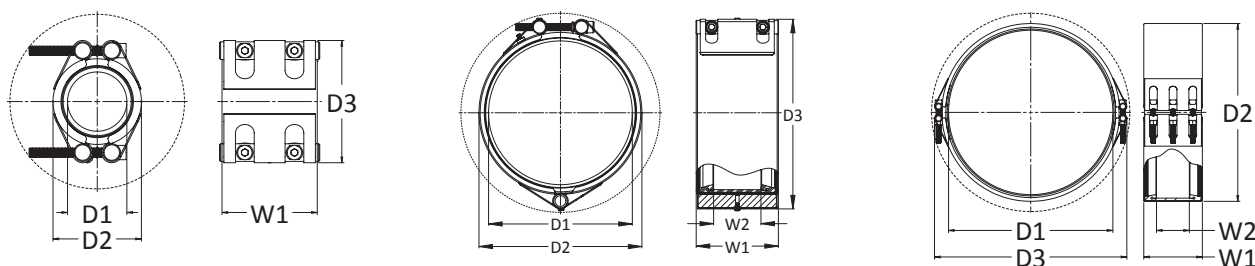
**Casing:** High strength steel  
**Coating:** Rilsan/PVC/  
Epoxy/Galvanized  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ



**Sizes:** 48.3 mm to 3000.0 mm  
**Gaskets:** EPDM -40°C to +100°C, NBR -20°C to +80°C, HNBR -20°C to +130°C, Viton -20°C to +250°C, Silicone -70°C to +270°C (*depending on grade*)  
**Pipe Materials:** Carbon steel, cast and ductile iron, stainless steel, copper, cunifer, GRP, asbestos cement, HDPE, MDPE, PVC, uPVC, ABS

1.4462 Duplex casings and fasteners available on request.

# Repair Coupling Dimensions



| D1<br>Pipe<br>O.D.                                                                                                             | Pipe<br>Nominal<br>Bore | Available Coupling Widths: |        |        |        |        |        | Working Pressure Available<br>in the following PN ratings: | W2                        | D2 Coupling O.D. =<br>D1 (mm) + the following: |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------|--------|--------|--------|--------|--------|------------------------------------------------------------|---------------------------|------------------------------------------------|
|                                                                                                                                | (mm)                    | 85 mm                      | 110 mm | 140 mm | 210 mm | 310 mm | 410 mm |                                                            | (mm)                      | (mm)                                           |
| Teekay Repair Couplings are available to suit any pipe O.D. up to 3000 mm. Please contact us with OD prior to order placement. | 40                      | ●                          |        |        |        |        |        | 16 / 25 / 40                                               | 42                        | 20                                             |
|                                                                                                                                | 50                      | ●                          |        |        |        |        |        | 16 / 25 / 40                                               | 42                        | 20                                             |
|                                                                                                                                | 75                      |                            | ●      |        |        |        |        | 16 / 25 / 40                                               | 67                        | 22                                             |
|                                                                                                                                | 100                     |                            | ●      |        |        |        |        | 16 / 25 / 40                                               | 67                        | 22                                             |
|                                                                                                                                | 150                     |                            | ●      | ●      |        |        |        | 16 / 25 / 40                                               | 67 / 80                   | 22 / 28                                        |
|                                                                                                                                | 200                     |                            | ●      | ●      | ●      |        |        | 16 / 25 / 40                                               | 67 / 80 / 120             | 22 / 28 / 42                                   |
|                                                                                                                                | 250                     |                            | ●      | ●      | ●      |        |        | 16 / 25 / 40                                               | 67 / 80 / 120             | 22 / 28 / 42                                   |
|                                                                                                                                | 300                     |                            | ●      | ●      | ●      | ●      | ●      | 10 / 16 / 25                                               | 67 / 80 / 120 / 220 / 320 | 22 / 28 / 42 / 42 / 42                         |
|                                                                                                                                | 350                     |                            |        | ●      | ●      | ●      | ●      | 10 / 16 / 25                                               | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 400                     |                            |        | ●      | ●      | ●      | ●      | 10 / 16 / 25                                               | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 450                     |                            |        | ●      | ●      | ●      | ●      | 10 / 16 / 25                                               | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 500                     |                            |        | ●      | ●      | ●      | ●      | 6 / 10 / 16                                                | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 600                     |                            |        | ●      | ●      | ●      | ●      | 6 / 10 / 16                                                | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 700                     |                            |        | ●      | ●      | ●      | ●      | 6 / 10 / 16                                                | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 800                     |                            |        | ●      | ●      | ●      | ●      | 6 / 10 / 16                                                | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 900                     |                            |        | ●      | ●      | ●      | ●      | 2.5 / 6 / 10                                               | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 1000                    |                            |        | ●      | ●      | ●      | ●      | 2.5 / 6 / 10                                               | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 1100                    |                            |        | ●      | ●      | ●      | ●      | 2.5 / 6 / 10                                               | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 1200                    |                            |        | ●      | ●      | ●      | ●      | 2.5 / 6 / 10                                               | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 1300                    |                            |        | ●      | ●      | ●      | ●      | 2.5 / 6                                                    | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 1400                    |                            |        | ●      | ●      | ●      | ●      | 2.5 / 6                                                    | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 1500                    |                            |        | ●      | ●      | ●      | ●      | 2.5 / 6                                                    | 80 / 120 / 220 / 320      | 28 / 42 / 42 / 42                              |
|                                                                                                                                | 1600                    |                            |        |        | ●      | ●      | ●      | 2.5 / 6                                                    | 120 / 220 / 320           | 42 / 42 / 42                                   |
|                                                                                                                                | 1700                    |                            |        |        | ●      | ●      | ●      | 2.5 / 6                                                    | 120 / 220 / 320           | 42 / 42 / 42                                   |
|                                                                                                                                | 1800                    |                            |        |        | ●      | ●      | ●      | 2.5 / 6                                                    | 120 / 220 / 320           | 42 / 42 / 42                                   |
|                                                                                                                                | 1900                    |                            |        |        | ●      | ●      | ●      | 2.5 / 6                                                    | 120 / 220 / 320           | 42 / 42 / 42                                   |
|                                                                                                                                | 2000                    |                            |        |        | ●      | ●      | ●      | 2.5 / 6                                                    | 120 / 220 / 320           | 42 / 42 / 42                                   |
|                                                                                                                                | 2100                    |                            |        |        | ●      | ●      | ●      | 2.5                                                        | 120 / 220 / 320           | 42 / 42 / 102                                  |
|                                                                                                                                | 2200                    |                            |        |        | ●      | ●      | ●      | 2.5                                                        | 120 / 220 / 320           | 42 / 42 / 102                                  |
|                                                                                                                                | 2300                    |                            |        |        | ●      | ●      | ●      | 2.5                                                        | 120 / 220 / 320           | 42 / 42 / 102                                  |
|                                                                                                                                | 2400                    |                            |        |        | ●      | ●      | ●      | 2.5                                                        | 120 / 220 / 320           | 42 / 42 / 102                                  |
|                                                                                                                                | 2500                    |                            |        |        | ●      | ●      | ●      | 2.5                                                        | 120 / 220 / 320           | 42 / 42 / 102                                  |
|                                                                                                                                | 2600                    |                            |        |        | ●      | ●      | ●      | 2.5                                                        | 120 / 220 / 320           | 42 / 42 / 102                                  |
|                                                                                                                                | 2700                    |                            |        |        | ●      | ●      | ●      | 2.5                                                        | 120 / 220 / 320           | 42 / 42 / 102                                  |
|                                                                                                                                | 2800                    |                            |        |        | ●      | ●      | ●      | 2.5                                                        | 120 / 220 / 320           | 42 / 42 / 102                                  |
|                                                                                                                                | 2900                    |                            |        |        | ●      | ●      | ●      | 2.5                                                        | 120 / 220 / 320           | 42 / 42 / 102                                  |
|                                                                                                                                | 3000                    |                            |        |        | ●      | ●      | ●      | 2.5                                                        | 120 / 220 / 320           | 42 / 42 / 102                                  |

As illustrated above, Teekay Repair Couplings can be supplied in hinged or double lockpart versions to suit applications where tolerance or accessibility may be critical.

| D3 Overall Coupling O.D. =<br>D1 (mm) + the following: | Number of Screws  | Approximate Weight   | Maximum Allowable<br>Tolerance on Pipe O.D. +/- | Pipe<br>Nominal<br>Bore | D1<br>Pipe<br>O.D.                                                                                                             |
|--------------------------------------------------------|-------------------|----------------------|-------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| (mm)                                                   |                   | (KG)                 | (mm)                                            | (mm)                    |                                                                                                                                |
| 58                                                     | 4                 | 2.2                  | 2                                               | 40                      | Teekay Repair Couplings are available to suit any pipe O.D. up to 3000 mm. Please contact us with OD prior to order placement. |
| 58                                                     | 4                 | 2.6                  | 2                                               | 50                      |                                                                                                                                |
| 66                                                     | 2                 | 3                    | 2                                               | 75                      |                                                                                                                                |
| 66                                                     | 2                 | 3                    | 2                                               | 100                     |                                                                                                                                |
| 66 / 88                                                | 2 / 2             | 4 / 5                | 2.5 / 2.5                                       | 150                     |                                                                                                                                |
| 66 / 88 / 102                                          | 2 / 2 / 2         | 4 / 6 / 10           | 3 / 3 / 3                                       | 200                     |                                                                                                                                |
| 66 / 88 / 102                                          | 2 / 2 / 2         | 5 / 6 / 10           | 3 / 3 / 3                                       | 250                     |                                                                                                                                |
| 66 / 88 / 102 / 102 / 102                              | 2 / 2 / 2 / 4 / 6 | 5 / 7 / 11 / 21 / 27 | 3 / 4 / 4 / 4 / 4                               | 300                     |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 8 / 13 / 22 / 29     | 4 / 4 / 4 / 4                                   | 350                     |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 9 / 15 / 24 / 31     | 4 / 4 / 4 / 4                                   | 400                     |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 11 / 16 / 26 / 34    | 4 / 4 / 4 / 4                                   | 450                     |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 11 / 18 / 31 / 38    | 4 / 4 / 4 / 4                                   | 500                     |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 13 / 20 / 35 / 45    | 4 / 5 / 5 / 5                                   | 600                     |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 14 / 25 / 39 / 50    | 4 / 5 / 5 / 5                                   | 700                     |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 16 / 27 / 43 / 55    | 4 / 5 / 5 / 5                                   | 800                     |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 18 / 30 / 46 / 61    | 4 / 5 / 5 / 5                                   | 900                     |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 19 / 33 / 50 / 66    | 4 / 5 / 5 / 5                                   | 1000                    |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 20 / 41 / 54 / 71    | 4 / 5 / 5 / 5                                   | 1100                    |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 2 / 3 / 4 / 6     | 22 / 44 / 58 / 76    | 4 / 5 / 5 / 5                                   | 1200                    |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 4 / 6 / 8 / 12    | 27 / 48 / 64 / 83    | 4 / 6 / 6 / 6                                   | 1300                    |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 4 / 6 / 8 / 12    | 29 / 51 / 68 / 90    | 4 / 6 / 6 / 6                                   | 1400                    |                                                                                                                                |
| 88 / 102 / 102 / 102                                   | 4 / 6 / 8 / 12    | 32 / 53 / 72 / 95    | 4 / 6 / 6 / 6                                   | 1500                    |                                                                                                                                |
| 102 / 102 / 102                                        | 4 / 6 / 8 / 12    | 57 / 76 / 100        | 6 / 6 / 6                                       | 1600                    |                                                                                                                                |
| 102 / 102 / 102                                        | 4 / 6 / 8 / 12    | 60 / 80 / 105        | 6 / 6 / 6                                       | 1700                    |                                                                                                                                |
| 102 / 102 / 102                                        | 4 / 6 / 8 / 12    | 62 / 84 / 110        | 6 / 6 / 6                                       | 1800                    |                                                                                                                                |
| 102 / 102 / 102                                        | 4 / 6 / 8 / 12    | 62 / 84 / 115        | 6 / 6 / 6                                       | 1900                    |                                                                                                                                |
| 102 / 102 / 102                                        | 4 / 6 / 8 / 12    | 65 / 88 / 120        | 6 / 6 / 6                                       | 2000                    |                                                                                                                                |
| 102 / 102 / 102                                        | 4 / 6 / 8 / 24    | 68 / 91 / 142        | 6 / 6 / 6                                       | 2100                    |                                                                                                                                |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 72 / 95 / 148        | 6 / 6 / 6                                       | 2200                    |                                                                                                                                |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 75 / 99 / 152        | 6 / 6 / 6                                       | 2300                    |                                                                                                                                |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 78 / 103 / 157       | 6 / 6 / 6                                       | 2400                    |                                                                                                                                |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 89 / 118 / 160       | 12 / 12 / 12                                    | 2500                    |                                                                                                                                |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 92 / 122 / 168       | 12 / 12 / 12                                    | 2600                    |                                                                                                                                |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 95 / 126 / 173       | 12 / 12 / 12                                    | 2700                    |                                                                                                                                |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 98 / 130 / 178       | 12 / 12 / 12                                    | 2800                    |                                                                                                                                |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 101 / 134 / 183      | 12 / 12 / 12                                    | 2900                    |                                                                                                                                |
| 102 / 102 / 102                                        | 12 / 16 / 24      | 104 / 138 / 189      | 12 / 12 / 12                                    | 3000                    |                                                                                                                                |

**NOTES:** The above tables are guides to the most common sizes. Couplings to suit specific outside diameters not listed may be manufactured to order. Please contact us for further details. Minimum burst is 1.5 times working pressure. Figures are based on typical values for standard wall carbon steel pipe. For use on thin or soft pipe materials such as thin wall stainless, copper alloy or plastic (by way of example only) please check with us first.

# Stepped Coupling



The Teekay Stepped coupling is a “problem-solver” on any site with the ability to join pipes of different ODs and different materials.

Typical applications:

- refurbishments (where the contractor is connecting a piping system back into the original layout)
- repairs to old water mains (where the pipe is so corroded it needs to be replaced with a new material in metric size)
- chamber connections
- pipe material transitions
- joining metallic pipe to plastic pipe

## Material Selection

### Type I

**Casing:** AISI 304 / DIN 1.4301

**Fasteners:** Alloy Steel, Coated

**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type II

**Casing:** AISI 304 / DIN 1.4301

**Fasteners:** AISI 316 / 316L

**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type IV

**Casing:** AISI 316L / DIN 1.4404

**Fasteners:** AISI 316 / 316L

**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type V

**Casing:** High strength steel

**Coating:** Rilsan/PVC/  
Epoxy/Galvanized

**Fasteners:** Alloy Steel, Coated

**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type VI

**Casing:** High strength steel

**Coating:** Rilsan/PVC/  
Epoxy/Galvanized

**Fasteners:** AISI 316 / 316L

**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ



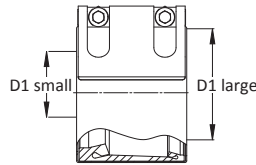
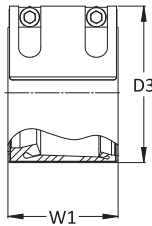
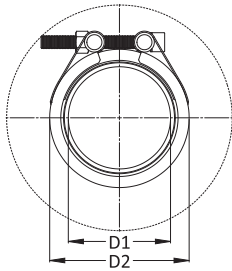
**Sizes:** 48.3 mm to 3000.0 mm

**Gaskets:** EPDM -40°C to +100°C, NBR -20°C to +80°C, HNBR -20°C to +130°C, Viton -20°C to +250°C, Silicone -70°C to +270°C (*depending on grade*)

**Pipe Materials:** Carbon steel, cast and ductile iron, stainless steel, copper, cupifer, GRP, asbestos cement, HDPE, MDPE, PVC, uPVC, ABS

1.4462 Duplex casings and fasteners available on request.

# Stepped Coupling Dimensions



Please note:  
Both outer diameters  
must be specified.

| Pipe O.D.<br>(smaller pipe) | Available Coupling Widths |        |        |        | Maximum Step       | Maximum Pressure Rating | No. Of Screws | Screw Size    | Approximate Weight |
|-----------------------------|---------------------------|--------|--------|--------|--------------------|-------------------------|---------------|---------------|--------------------|
| (mm)                        | 85 mm                     | 110 mm | 140 mm | 210 mm | (mm)               | PN                      |               |               | KG                 |
| 48.3 - 56                   | ●                         |        |        |        | + 5                | 16                      | 2             | M8            | 1                  |
| 57 - 72                     | ●                         |        |        |        | + 5                | 16                      | 2             | M8            | 1                  |
| 73 - 82.5                   | ●                         |        |        |        | + 5                | 16                      | 2             | M8            | 1                  |
| 83 - 99                     |                           | ●      |        |        | + 12               | 16                      | 2             | M10           | 2                  |
| 100 - 102                   |                           | ●      |        |        | + 15               | 16                      | 2             | M10           | 2                  |
| 100 - 127                   |                           | ●      |        |        | + 15               | 16                      | 2             | M10           | 2                  |
| 128 - 150                   |                           | ●      |        |        | + 15               | 16                      | 2             | M10           | 2.5                |
| 151 - 186                   |                           | ●      | ●      |        | + 15 / + 20        | 16 / 16                 | 2 / 2         | M10 / 16      | 2.5 / 4            |
| 187 - 205                   |                           | ●      | ●      |        | + 15 / + 20        | 16 / 16                 | 2 / 2         | M10 / 16      | 2.5 / 4            |
| 200 - 240                   |                           | ●      | ●      |        | + 15 / + 25        | 16 / 16                 | 2 / 2         | M10 / 16      | 3 / 4.5            |
| 241 - 260                   |                           | ●      | ●      | ●      | + 15 / + 25 / + 25 | 16 / 16 / 16            | 2 / 2 / 3     | M10 / 16 / 16 | 3.5 / 5 / 8        |
| 250 - 286                   |                           | ●      | ●      | ●      | + 15 / + 25 / + 25 | 16 / 16 / 16            | 2 / 2 / 3     | M10 / 16 / 16 | 3.5 / 5 / 8.5      |
| 287 - 326                   |                           | ●      |        |        | + 15               | 10                      | 2             | M10           | 4                  |
| 287 - 349                   |                           |        | ●      | ●      | + 25 / + 25        | 16 / 16                 | 2 / 3         | M16 / 16      | 6 / 10             |
| 350 - 399                   |                           |        | ●      | ●      | + 25 / + 25        | 16 / 16                 | 2 / 3         | M16 / 16      | 7 / 11             |
| 400 - 453                   |                           |        | ●      | ●      | + 25 / + 25        | 16 / 16                 | 2 / 3         | M16 / 16      | 8 / 13             |
| 450 - 507                   |                           |        | ●      | ●      | + 25 / + 25        | 10 / 16 / 10 / 16       | 2 / 3         | M16 / 16      | 9 / 14             |
| 500 - 560                   |                           |        | ●      | ●      | + 25 / + 25        | 10 / 16 / 10 / 16       | 2 / 3         | M16 / 16      | 9.5 / 16           |
| 561 - 667                   |                           |        | ●      | ●      | + 25 / + 25        | 10 / 16 / 10 / 16       | 2 / 3         | M16 / 16      | 11 / 17.5          |
| 668 - 750                   |                           |        | ●      | ●      | + 25 / + 25        | 10 / 10 / 16            | 2 / 3         | M16 / 16      | 12.5 / 22.5        |
| 751 - 850                   |                           |        | ●      | ●      | + 25 / + 25        | 10 / 10 / 16            | 2 / 3         | M16 / 16      | 14 / 25            |
| 851 - 950                   |                           |        | ●      | ●      | + 25 / + 25        | 10 / 10 / 16            | 2 / 3         | M16 / 16      | 16 / 28            |
| 951 - 1050                  |                           |        | ●      | ●      | + 25 / + 25        | 6 / 6                   | 2 / 3         | M16 / 16      | 17 / 30            |
| 1051 - 1150                 |                           |        | ●      | ●      | + 25 / + 25        | 6 / 6                   | 2 / 3         | M16 / 16      | 18 / 38            |
| 1151 - 1250                 |                           |        | ●      | ●      | + 25 / + 25        | 2.5 / 6 / 2.5 / 6       | 2 / 3         | M16 / 16      | 20 / 41            |
| 1251 - 1350                 |                           |        |        | ●      | + 25               | 2.5 / 6                 | 6             | M16           | 48                 |
| 1351 - 1450                 |                           |        |        | ●      | + 25               | 2.5 / 6                 | 6             | M16           | 50.5               |
| 1451 - 1550                 |                           |        |        | ●      | + 25               | 2.5 / 6                 | 6             | M16           | 53                 |
| 1551 - 1650                 |                           |        |        | ●      | + 25               | 2.5 / 6                 | 6             | M16           | 56.5               |
| 1651 - 1750                 |                           |        |        | ●      | + 25               | 2.5 / 5                 | 6             | M16           | 60                 |
| 1751 - 1850                 |                           |        |        | ●      | + 25               | 2.5 / 5                 | 6             | M16           | 62.5               |
| 1851 - 1950                 |                           |        |        | ●      | + 25               | 2.5 / 5                 | 6             | M16           | 65                 |
| 1951 - 2050                 |                           |        |        | ●      | + 25               | 2.5 / 5                 | 6             | M16           | 68                 |
| 2051 - 2150                 |                           |        |        | ●      | + 25               | 2.5 / 4                 | 6             | M16           | 71                 |
| 2151 - 2250                 |                           |        |        | ●      | + 25               | 2.5 / 4                 | 12            | M16           | 74                 |
| 2251 - 2350                 |                           |        |        | ●      | + 25               | 2.5 / 4                 | 12            | M16           | 76                 |
| 2351 - 2450                 |                           |        |        | ●      | + 25               | 2.5 / 4                 | 12            | M16           | 80                 |
| 2451 - 2550                 |                           |        |        | ●      | + 25               | 2.5 / 3                 | 12            | M16           | 87.5               |
| 2551 - 2650                 |                           |        |        | ●      | + 25               | 2.5 / 3                 | 12            | M16           | 93                 |
| 2651 - 2750                 |                           |        |        | ●      | + 25               | 2.5 / 3                 | 12            | M16           | 96                 |
| 2751 - 2850                 |                           |        |        | ●      | + 25               | 2.5 / 3                 | 12            | M16           | 99                 |
| 2851 - 2950                 |                           |        |        | ●      | + 25               | 2 / 3                   | 12            | M16           | 110                |
| 2951 - 3050                 |                           |        |        | ●      | + 25               | 2 / 3                   | 12            | M16           | 121                |

**NOTES:** See Notes page 18.

The Teekay Stepped Coupling is a non-axial restraint pipe coupling type.

# Reducer and Flanged Reducer



## Coupling Material Selection

### Type I

**Casing:** AISI 304 / DIN 1.4301

**Fasteners:** Alloy Steel, Coated

**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type II

**Casing:** AISI 304 / DIN 1.4301

**Fasteners:** AISI 316 / 316L

**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type IV

**Casing:** AISI 316L / DIN 1.4404

**Fasteners:** AISI 316 / 316L

**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type V

**Casing:** High strength steel

**Coating:** Rilsan/PVC/  
Epoxy/Galvanized

**Fasteners:** Alloy Steel, Coated

**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type VI

**Casing:** High strength steel

**Coating:** Rilsan/PVC/  
Epoxy/Galvanized

**Fasteners:** AISI 316 / 316L

**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

Have you got two pipes to join with a large difference in outside diameters? Use a Teekay reducer to make the connection!

Teekay reducers can be fabricated to suit any pipe O.D. and are available in both concentric and eccentric configurations. Two pipe couplings are supplied, one on either end of the reducer, with a choice of Axiflex or Axilock (depending on diameter and pressure).

Teekay also manufactures Flanged Reducers for connecting flanged pieces of equipment to plain end sections of pipe of a different size.

Please contact Teekay for further details.



**Sizes:** Smallest OD = 38.0 mm, Largest OD = 2000 mm.

**Reducer Materials:** Stainless Steel Options = AISI 304 / AISI 316L.  
Coated Steel Options = Galvanized / Rilsan / PVC / Epoxy

**Gaskets:** EPDM -40°C to +100°C, NBR -20°C to +80°C,  
HNBR -20°C to +130°C, Viton -20°C to +250°C,  
Silicone -70°C to +270°C (*depending on grade*)

**Pipe Materials:** Carbon steel, cast and ductile iron, stainless steel,  
copper, cunifer, GRP, concrete, asbestos cement,  
HDPE



## Coupling Material Selection

### Type I

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type II

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type IV

**Casing:** AISI 316L / DIN 1.4404  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type V

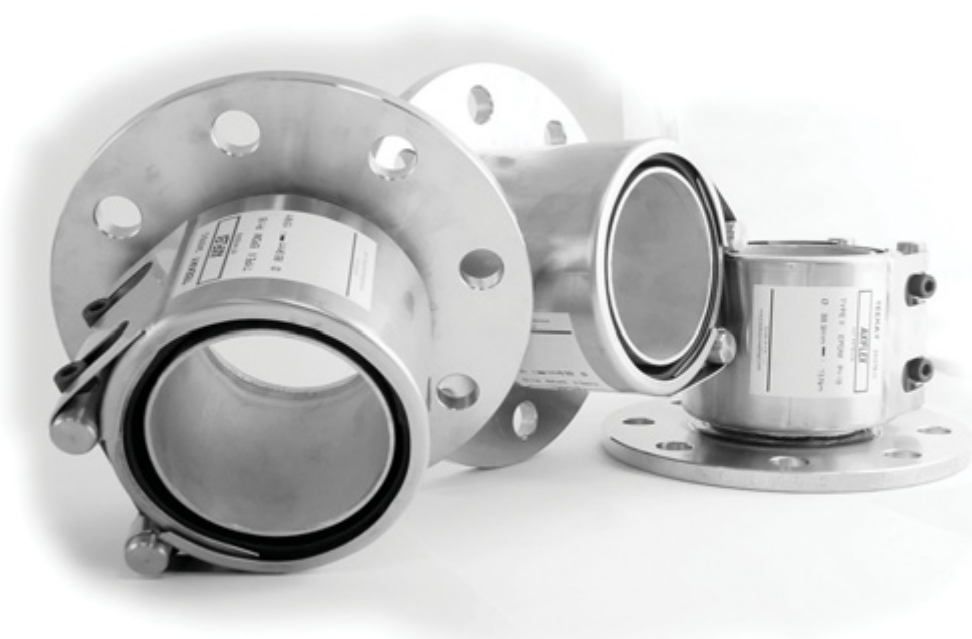
**Casing:** High strength steel  
**Coating:** Rilsan/PVC/  
Epoxy/Galvanized  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type VI

**Casing:** High strength steel  
**Coating:** Rilsan/PVC/  
Epoxy/Galvanized  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

Teekay Flange Adaptors make the installation of pumps and valves quicker and easier. Simply bolt the flange adaptor on to the existing flange and fasten the coupling over the joint between the flange adaptor and plain end pipe. This creates a useful maintenance point in the future: undo the bolts on the coupling rather than the nuts on the flange adaptor and lift out the piece of equipment!

Teekay Flange Adaptors can be fabricated to any pipe O.D. and are available in standard and non-standard drillings. Choose an Axiflex coupling to accommodate expansion and contraction or an Axilock for a fully anchored solution (depending on diameter and pressure).



### Sizes:

Smallest OD = 48.3 mm, Largest OD = 2000 mm.

### Flange Adaptor materials:

Stainless Steel Options = AISI 304 / AISI 316L.  
Coated Steel = Galvanized / Rilsan / PVC / Epoxy

### Gaskets:

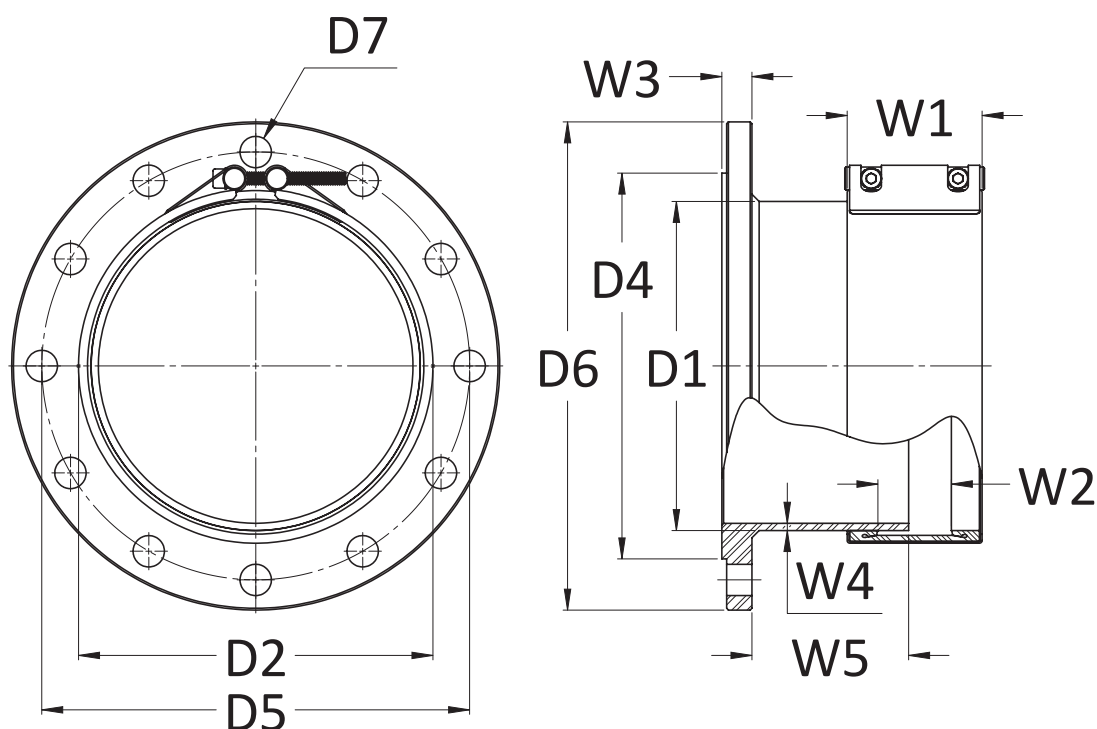
EPDM -40°C to +100°C, NBR -20°C to +80°C,  
HNBR -20°C to +130°C, Viton -20°C to +250°C,  
Silicone -70°C to +270°C (*depending on grade*)

### Pipe Materials:

Carbon steel, cast and ductile iron, stainless steel, copper, cunifer, GRP

1.4462 Duplex casings and fasteners available on request.

# Flange Adaptor Dimensions



## Flange Adaptor PN25 (25 bar)

To suit flanges drilled BS 4504

| Pipe Details   |                                                                               | Coupling Details              |                   |                             |               | Spigot Details      |                     | Flange Details          |                          |                |                       |                     |              |               | Approx. Weight |
|----------------|-------------------------------------------------------------------------------|-------------------------------|-------------------|-----------------------------|---------------|---------------------|---------------------|-------------------------|--------------------------|----------------|-----------------------|---------------------|--------------|---------------|----------------|
| Nom. Pipe Size | D1 Pipe O.D.                                                                  | D2 Coupling O.D.<br>= (D1+D2) | W1 Coupling Width | W2 Gap Between Sealing Lips | No. of Screws | W5 Length of Spigot | W4 Spigot Thickness | D4 Raised Face Diameter | D5 Pitch Circle Diameter | D6 Flange O.D. | D7 Bolt Hole Diameter | W3 Flange Thickness | No. of Bolts | Bolt Diameter | KGS            |
| 50             | Teekay Flange Adaptors can be manufactured to suit any pipe outside diameter. | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 102                     | 125                      | 165            | 18                    | 20                  | 4            | M16           | 5.0            |
| 65             |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 122                     | 145                      | 185            | 18                    | 20                  | 8            | M16           | 7.5            |
| 80             |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 138                     | 160                      | 200            | 18                    | 20                  | 8            | M16           | 9.0            |
| 100            |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 162                     | 190                      | 235            | 22                    | 20                  | 8            | M20           | 10.5           |
| 125            |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 188                     | 220                      | 270            | 26                    | 20                  | 8            | M24           | 12.0           |
| 150            |                                                                               | 28                            | 140               | 80                          | 2             | 150                 | 6                   | 218                     | 250                      | 300            | 26                    | 20                  | 8            | M24           | 13.5           |
| 175            |                                                                               | 28                            | 140               | 80                          | 2             | 150                 | 6                   | 248                     | 280                      | 330            | 26                    | 20                  | 12           | M24           | 14.2           |
| 200            |                                                                               | 28                            | 140               | 80                          | 2             | 150                 | 6                   | 278                     | 310                      | 360            | 26                    | 20                  | 12           | M24           | 18.5           |
| 250            |                                                                               | 28                            | 140               | 80                          | 2             | 153                 | 6                   | 335                     | 370                      | 425            | 30                    | 20                  | 12           | M27           | 24.9           |
| 300            |                                                                               | 28                            | 140               | 80                          | 2             | 147                 | 6                   | 395                     | 430                      | 485            | 30                    | 25                  | 16           | M27           | 34.0           |
| 350            |                                                                               | 28                            | 140               | 80                          | 2             | 143                 | 6                   | 450                     | 490                      | 555            | 33                    | 25                  | 16           | M30           | 53.0           |
| 400            |                                                                               | 28                            | 140               | 80                          | 2             | 159                 | 6                   | 505                     | 550                      | 620            | 36                    | 25                  | 16           | M33           | 65.0           |
| 450            |                                                                               | 28                            | 140               | 80                          | 2             | 153                 | 6                   | 555                     | 600                      | 670            | 36                    | 25                  | 20           | M33           | 84.5           |
| 500            |                                                                               | 28                            | 140               | 80                          | 2             | 147                 | 6                   | 615                     | 660                      | 730            | 36                    | 25                  | 20           | M33           | 102.8          |
| 600            |                                                                               | 28                            | 140               | 80                          | 2             | 139                 | 6                   | 720                     | 770                      | 845            | 39                    | 25                  | 20           | M36           | 146.3          |

## Flange Adaptor PN16 (16 bar)

To suit flanges drilled BS 4504 PN16 DIN 2532 PN16 BS4772

| Pipe Details   |                                                                               | Coupling Details              |                   |                             |               | Spigot Details      |                     | Flange Details          |                          |                |                       |                     |              |               |       | Approx. Weight |
|----------------|-------------------------------------------------------------------------------|-------------------------------|-------------------|-----------------------------|---------------|---------------------|---------------------|-------------------------|--------------------------|----------------|-----------------------|---------------------|--------------|---------------|-------|----------------|
| Nom. Pipe Size | D1 Pipe O.D.                                                                  | D2 Coupling O.D.<br>= (D1+D2) | W1 Coupling Width | W2 Gap Between Sealing Lips | No. of Screws | W5 Length of Spigot | W4 Spigot Thickness | D4 Raised Face Diameter | D5 Pitch Circle Diameter | D6 Flange O.D. | D7 Bolt Hole Diameter | W3 Flange Thickness | No. of Bolts | Bolt Diameter | KGS   |                |
| 50             | Teekay Flange Adaptors can be manufactured to suit any pipe outside diameter. | 20                            | 85                | 42                          | 2             | 95                  | 3                   | 102                     | 125                      | 165            | 18                    | 10                  | 4            | M16           | 5.0   |                |
| 65             |                                                                               | 20                            | 85                | 42                          | 2             | 95                  | 3                   | 122                     | 145                      | 185            | 18                    | 10                  | 4            | M16           | 6.0   |                |
| 80             |                                                                               | 20                            | 85                | 42                          | 2             | 95                  | 6                   | 138                     | 160                      | 200            | 18                    | 10                  | 8            | M16           | 6.3   |                |
| 100            |                                                                               | 20                            | 85                | 42                          | 2             | 95                  | 6                   | 158                     | 180                      | 220            | 18                    | 10                  | 8            | M16           | 7.8   |                |
| 125            |                                                                               | 20                            | 85                | 42                          | 2             | 95                  | 6                   | 188                     | 210                      | 250            | 18                    | 10                  | 8            | M16           | 10.2  |                |
| 150            |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 212                     | 240                      | 285            | 22                    | 10                  | 8            | M20           | 13.5  |                |
| 175            |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 242                     | 270                      | 315            | 22                    | 20                  | 8            | M20           | 15.8  |                |
| 200            |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 268                     | 295                      | 340            | 22                    | 20                  | 12           | M20           | 17.5  |                |
| 250            |                                                                               | 22                            | 110               | 67                          | 2             | 130                 | 6                   | 320                     | 355                      | 405            | 26                    | 20                  | 12           | M24           | 21.2  |                |
| 300            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | FF                      | 410                      | 460            | 26                    | 25                  | 12           | M24           | 30.0  |                |
| 350            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | FF                      | 470                      | 520            | 26                    | 25                  | 16           | M24           | 36.5  |                |
| 400            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | FF                      | 525                      | 580            | 30                    | 25                  | 16           | M27           | 42.7  |                |
| 450            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | FF                      | 585                      | 640            | 30                    | 25                  | 20           | M27           | 50.5  |                |
| 500            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | FF                      | 650                      | 715            | 33                    | 25                  | 20           | M30           | 62.2  |                |
| 600            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | FF                      | 770                      | 840            | 36                    | 25                  | 20           | M33           | 78.0  |                |
| 700            |                                                                               | 42                            | 210               | 120                         | 3             | 230                 | 6                   | FF                      | 840                      | 910            | 36                    | 25                  | 24           | M33           | 90.5  |                |
| 800            |                                                                               | 42                            | 210               | 120                         | 3             | 230                 | 8                   | FF                      | 950                      | 1025           | 39                    | 25                  | 24           | M36           | 118.4 |                |
| 900            |                                                                               | 42                            | 210               | 120                         | 3             | 230                 | 8                   | FF                      | 1050                     | 1125           | 39                    | 25                  | 28           | M36           | 131.0 |                |
| 1000           |                                                                               | 42                            | 210               | 120                         | 3             | 230                 | 10                  | FF                      | 1170                     | 1255           | 42                    | 25                  | 28           | M39           | 154.7 |                |
| 1200           |                                                                               | 42                            | 210               | 120                         | 3             | 217                 | 10                  | FF                      | 1390                     | 1485           | 48                    | 38                  | 32           | M45           | 251.0 |                |

## Flange Adaptor PN10 (10 bar)

To suit flanges drilled BS 4504 PN10 DIN 2532 PN10 BS4772 PN10

| Pipe Details   |                                                                               | Coupling Details              |                   |                                   |               | Spigot Details         |                        | Flange Details             |                             |                |                          |                        |              |               |       | Approx. Weight |
|----------------|-------------------------------------------------------------------------------|-------------------------------|-------------------|-----------------------------------|---------------|------------------------|------------------------|----------------------------|-----------------------------|----------------|--------------------------|------------------------|--------------|---------------|-------|----------------|
| Nom. Pipe Size | D1 Pipe O.D.                                                                  | D2 Coupling O.D.<br>= (D1+D2) | W1 Coupling Width | W2 Gap<br>Between Sealing<br>Lips | No. of Screws | W5 Length of<br>Spigot | W4 Spigot<br>Thickness | D4 Raised Face<br>Diameter | D5 Pitch Circle<br>Diameter | D6 Flange O.D. | D7 Bolt Hole<br>Diameter | W3 Flange<br>Thickness | No. of Bolts | Bolt Diameter | KGS   |                |
| 50             | Teekay Flange Adaptors can be manufactured to suit any pipe outside diameter. | 20                            | 85                | 42                                | 2             | 95                     | 3                      | 102                        | 125                         | 165            | 18                       | 10                     | 4            | M16           | 4.2   |                |
| 65             |                                                                               | 20                            | 85                | 42                                | 2             | 95                     | 3                      | 122                        | 145                         | 185            | 18                       | 10                     | 4            | M16           | 4.7   |                |
| 80             |                                                                               | 20                            | 85                | 42                                | 2             | 95                     | 6                      | 138                        | 160                         | 200            | 18                       | 10                     | 8            | M16           | 6.8   |                |
| 100            |                                                                               | 20                            | 85                | 42                                | 2             | 95                     | 6                      | 158                        | 180                         | 220            | 18                       | 10                     | 8            | M16           | 7.9   |                |
| 125            |                                                                               | 20                            | 85                | 42                                | 2             | 95                     | 6                      | 188                        | 210                         | 250            | 18                       | 10                     | 8            | M16           | 9.7   |                |
| 150            |                                                                               | 22                            | 110               | 67                                | 2             | 120                    | 6                      | 212                        | 240                         | 285            | 22                       | 10                     | 8            | M20           | 12.4  |                |
| 175            |                                                                               | 22                            | 110               | 67                                | 2             | 120                    | 6                      | 242                        | 270                         | 315            | 22                       | 20                     | 8            | M20           | 14.4  |                |
| 200            |                                                                               | 22                            | 110               | 67                                | 2             | 120                    | 6                      | 268                        | 295                         | 340            | 22                       | 20                     | 8            | M20           | 15.9  |                |
| 250            |                                                                               | 22                            | 110               | 67                                | 2             | 130                    | 6                      | 320                        | 350                         | 395            | 22                       | 20                     | 12           | M20           | 18.9  |                |
| 300            |                                                                               | 22                            | 110               | 67                                | 2             | 130                    | 6                      | 370                        | 400                         | 445            | 22                       | 25                     | 12           | M20           | 21.8  |                |
| 350            |                                                                               | 28                            | 140               | 80                                | 2             | 160                    | 6                      | FF                         | 460                         | 505            | 22                       | 25                     | 16           | M20           | 34.0  |                |
| 400            |                                                                               | 28                            | 140               | 80                                | 2             | 160                    | 6                      | FF                         | 515                         | 565            | 26                       | 25                     | 16           | M24           | 40.0  |                |
| 450            |                                                                               | 28                            | 140               | 80                                | 2             | 160                    | 6                      | FF                         | 565                         | 615            | 26                       | 25                     | 20           | M24           | 45.3  |                |
| 500            |                                                                               | 28                            | 140               | 80                                | 2             | 160                    | 6                      | FF                         | 620                         | 670            | 26                       | 25                     | 20           | M24           | 50.1  |                |
| 600            |                                                                               | 28                            | 140               | 80                                | 2             | 160                    | 6                      | FF                         | 725                         | 780            | 30                       | 25                     | 20           | M27           | 62.7  |                |
| 700            |                                                                               | 42                            | 210               | 120                               | 3             | 230                    | 6                      | FF                         | 840                         | 895            | 30                       | 25                     | 24           | M27           | 86.2  |                |
| 800            |                                                                               | 42                            | 210               | 120                               | 3             | 230                    | 8                      | FF                         | 950                         | 1015           | 33                       | 25                     | 24           | M30           | 115.2 |                |
| 900            |                                                                               | 42                            | 210               | 120                               | 3             | 230                    | 8                      | FF                         | 1050                        | 1115           | 33                       | 25                     | 28           | M30           | 127.5 |                |
| 1000           |                                                                               | 42                            | 210               | 120                               | 3             | 230                    | 10                     | FF                         | 1160                        | 1230           | 36                       | 25                     | 28           | M33           | 144.9 |                |
| 1200           |                                                                               | 42                            | 210               | 120                               | 3             | 217                    | 10                     | FF                         | 1380                        | 1455           | 39                       | 38                     | 32           | M36           | 229.8 |                |
| 1400           | 42                                                                            | 210                           | 120               | 6                                 | 217           | 10                     | FF                     | 1570                       | 1675                        | 43             | 38                       | 36                     | M39          | 316.5         |       |                |
| 1600           | 42                                                                            | 210                           | 120               | 6                                 | 245           | 10                     | FF                     | 1820                       | 1915                        | 49             | 60                       | 40                     | M45          | 529.3         |       |                |

# Flange Adaptor Dimensions

## Flange Adaptor PN6 (6 bar)

To suit flanges drilled BS 4504

| Pipe Details   |                                                                               | Coupling Details              |                   |                             |               | Spigot Details      |                     | Flange Details          |                          |                |                       |                     |              |               | Approx. Weight |
|----------------|-------------------------------------------------------------------------------|-------------------------------|-------------------|-----------------------------|---------------|---------------------|---------------------|-------------------------|--------------------------|----------------|-----------------------|---------------------|--------------|---------------|----------------|
| Nom. Pipe Size | D1 Pipe O.D.                                                                  | D2 Coupling O.D.<br>= (D1+D2) | W1 Coupling Width | W2 Gap Between Sealing Lips | No. of Screws | W5 Length of Spigot | W4 Spigot Thickness | D4 Raised Face Diameter | D5 Pitch Circle Diameter | D6 Flange O.D. | D7 Bolt Hole Diameter | W3 Flange Thickness | No. of Bolts | Bolt Diameter | KGS            |
| 50             | Teekay Flange Adaptors can be manufactured to suit any pipe outside diameter. | 20                            | 85                | 42                          | 2             | 95                  | 3                   | 90                      | 110                      | 140            | 14                    | 10                  | 4            | M12           | 3.5            |
| 65             |                                                                               | 20                            | 85                | 42                          | 2             | 95                  | 3                   | 110                     | 130                      | 160            | 14                    | 10                  | 4            | M12           | 4.0            |
| 80             |                                                                               | 20                            | 85                | 42                          | 2             | 95                  | 6                   | 128                     | 150                      | 190            | 18                    | 10                  | 4            | M16           | 5.1            |
| 100            |                                                                               | 20                            | 85                | 42                          | 2             | 95                  | 6                   | 148                     | 170                      | 210            | 18                    | 10                  | 4            | M16           | 6.4            |
| 125            |                                                                               | 20                            | 85                | 42                          | 2             | 95                  | 6                   | 178                     | 200                      | 240            | 18                    | 10                  | 8            | M16           | 8.1            |
| 150            |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 202                     | 225                      | 265            | 18                    | 10                  | 8            | M16           | 9.5            |
| 200            |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 258                     | 280                      | 320            | 18                    | 20                  | 8            | M16           | 12.9           |
| 250            |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 312                     | 335                      | 375            | 18                    | 20                  | 12           | M16           | 15.9           |
| 300            |                                                                               | 22                            | 110               | 67                          | 2             | 120                 | 6                   | 365                     | 395                      | 440            | 22                    | 25                  | 12           | M20           | 19.5           |
| 350            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | 415                     | 445                      | 490            | 22                    | 25                  | 12           | M20           | 31.7           |
| 400            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | FF                      | 495                      | 540            | 22                    | 25                  | 16           | M20           | 36.6           |
| 450            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | FF                      | 550                      | 595            | 22                    | 25                  | 16           | M20           | 41.5           |
| 500            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | FF                      | 600                      | 645            | 22                    | 25                  | 20           | M20           | 45.0           |
| 600            |                                                                               | 28                            | 140               | 80                          | 2             | 160                 | 6                   | FF                      | 705                      | 755            | 26                    | 25                  | 20           | M24           | 56.7           |
| 700            |                                                                               | 42                            | 210               | 120                         | 3             | 230                 | 6                   | FF                      | 810                      | 860            | 26                    | 25                  | 24           | M24           | 76.6           |
| 800            |                                                                               | 42                            | 210               | 120                         | 3             | 230                 | 8                   | FF                      | 920                      | 975            | 30                    | 25                  | 24           | M27           | 102.7          |
| 900            |                                                                               | 42                            | 210               | 120                         | 3             | 230                 | 8                   | FF                      | 1020                     | 1075           | 30                    | 25                  | 24           | M27           | 113.7          |
| 1000           |                                                                               | 42                            | 210               | 120                         | 3             | 230                 | 10                  | FF                      | 1120                     | 1175           | 30                    | 25                  | 28           | M27           | 124.0          |
| 1200           |                                                                               | 42                            | 210               | 120                         | 3             | 230                 | 10                  | FF                      | 1340                     | 1405           | 33                    | 38                  | 32           | M30           | 195.6          |
| 1400           |                                                                               | 42                            | 210               | 120                         | 6             | 230                 | 10                  | FF                      | 1560                     | 1630           | 36                    | 38                  | 36           | M33           | 280.9          |
| 1600           |                                                                               | 42                            | 210               | 120                         | 6             | 245                 | 10                  | FF                      | 1760                     | 1830           | 36                    | 60                  | 40           | M33           | 409.0          |
| 1800           |                                                                               | 42                            | 210               | 120                         | 6             | 245                 | 15                  | FF                      | 1970                     | 2045           | 39                    | 60                  | 44           | M36           | 511.1          |
| 2000           |                                                                               | 42                            | 210               | 120                         | 6             | 245                 | 15                  | FF                      | 2180                     | 2265           | 42                    | 60                  | 48           | M39           | 597.8          |

## Flange Adaptor PN2.5 (2.5 bar)

To suit flanges drilled BS 4504

| Pipe Details   |                                                                               | Coupling Details              |                   |                             |               | Spigot Details      |                     | Flange Details          |                          |                |                       |                     |              |               | Approx. Weight |
|----------------|-------------------------------------------------------------------------------|-------------------------------|-------------------|-----------------------------|---------------|---------------------|---------------------|-------------------------|--------------------------|----------------|-----------------------|---------------------|--------------|---------------|----------------|
| Nom. Pipe Size | D1 Pipe O.D.                                                                  | D2 Coupling O.D.<br>= (D1+D2) | W1 Coupling Width | W2 Gap Between Sealing Lips | No. of Screws | W5 Length of Spigot | W4 Spigot Thickness | D4 Raised Face Diameter | D5 Pitch Circle Diameter | D6 Flange O.D. | D7 Bolt Hole Diameter | W3 Flange Thickness | No. of Bolts | Bolt Diameter | KGS            |
| 1200           | Teekay Flange Adaptors can be manufactured to suit any pipe outside diameter. | 42                            | 210               | 120                         | 3             | 219                 | 10                  | 1280                    | 1320                     | 1375           | 30                    | 38                  | 32           | M27           | 164.2          |
| 1400           |                                                                               | 42                            | 210               | 120                         | 6             | 213                 | 10                  | 1480                    | 1520                     | 1575           | 30                    | 38                  | 36           | M27           | 225.4          |
| 1600           |                                                                               | 42                            | 210               | 120                         | 6             | 259                 | 10                  | 1690                    | 1730                     | 1790           | 30                    | 60                  | 40           | M27           | 281.4          |
| 1800           |                                                                               | 42                            | 210               | 120                         | 6             | 253                 | 15                  | 1890                    | 1930                     | 1990           | 30                    | 60                  | 44           | M27           | 356.5          |
| 2000           |                                                                               | 42                            | 210               | 120                         | 6             | 247                 | 15                  | 2090                    | 2130                     | 2190           | 30                    | 60                  | 48           | M27           | 446.2          |

Other flange tables and drillings such as BS10 Tables A-E or BS1506/ANSI B16.5 Classes 150 and 300 can be supplied as standard. Different or non-standard drillings are also readily available. Dimensions for these are available from the Teekay Technical Department.



Teekay Dismantling Joints facilitate the easy access and removal of equipment when it comes to long-term maintenance of piping systems. Rather than moving large sections of fixed pipework, use the Dismantling Joint to create space and easy access to pumps, valves and flowmeters.

Teekay Dismantling Joints enable up to 100 mm of longitudinal adjustment. Each joint comes with a Teekay Axiflex coupling and axial restraint is provided by the high tensile steel tie bars.

## Coupling Material Selection

### Type I

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type II

**Casing:** AISI 304 / DIN 1.4301  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type IV

**Casing:** AISI 316L / DIN 1.4404  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type V

**Casing:** High strength steel  
**Coating:** Rilsan/PVC/  
 Epoxy/Galvanized  
**Fasteners:** Alloy Steel, Coated  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ

### Type VI

**Casing:** High strength steel  
**Coating:** Rilsan/PVC/  
 Epoxy/Galvanized  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ



### Sizes:

Smallest OD = 48.3 mm, Largest OD = 2000 mm.

### Dismantling Joint materials:

Stainless Steel Options = AISI 304 / AISI 316L.  
 Coated Steel Options = Galvanized / Rilsan / PVC / Epoxy

### Gaskets:

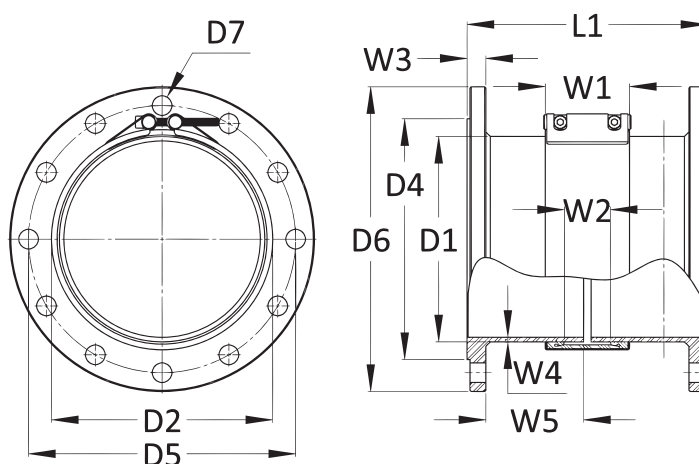
EPDM -40°C to +100°C, NBR -20°C to +80°C, HNBR -20°C to +130°C, Viton -20°C to +250°C, Silicone -70°C to +270°C (*depending on grade*)

### Pipe Materials:

Carbon steel, cast and ductile iron, stainless steel, copper, cunifer, GRP

1.4462 Duplex casings and fasteners available on request.

# Dismantling Joint Dimensions



## Dismantling Joint PN16 (16 bar)

To suit flanges drilled BS 4504 PN16 DIN 2532 PN16 BS4772

| Size           | Overall Length |              | Coupling Details     |               |            | Tie Bar Details |          |        | Flange Details           |                |                       | Approx. Weight         |              |        |
|----------------|----------------|--------------|----------------------|---------------|------------|-----------------|----------|--------|--------------------------|----------------|-----------------------|------------------------|--------------|--------|
| Nom. Pipe Size | L1 (minimum)   | L1 (maximum) | W1<br>Coupling Width | No. of Screws | Screw Size | No. of Tie Bars | Diameter | Length | D5 Pitch Circle Diameter | D6 Flange O.D. | D7 Bolt Hole Diameter | W3<br>Flange Thickness | No. of Bolts | KGS    |
| 40             | 125            | 165          | 85                   | 2             | M8         | 4               | M16      | 300    | 110                      | 150            | 18                    | 10                     | 4            | 9.0    |
| 50             | 125            | 165          | 85                   | 2             | M8         | 4               | M16      | 300    | 125                      | 165            | 18                    | 10                     | 4            | 10.0   |
| 65             | 125            | 165          | 85                   | 2             | M8         | 4               | M16      | 300    | 145                      | 185            | 18                    | 10                     | 4            | 12.0   |
| 80             | 150            | 190          | 110                  | 2             | M10        | 4               | M16      | 300    | 160                      | 200            | 18                    | 10                     | 8            | 12.6   |
| 100            | 150            | 190          | 110                  | 2             | M10        | 4               | M16      | 300    | 180                      | 220            | 18                    | 10                     | 8            | 15.6   |
| 125            | 150            | 190          | 110                  | 2             | M10        | 4               | M16      | 300    | 210                      | 250            | 18                    | 10                     | 8            | 20.4   |
| 150            | 150            | 190          | 110                  | 2             | M10        | 4               | M20      | 310    | 240                      | 285            | 22                    | 10                     | 8            | 27.0   |
| 175            | 170            | 210          | 110                  | 2             | M10        | 4               | M20      | 310    | 270                      | 315            | 22                    | 20                     | 8            | 31.6   |
| 200            | 170            | 210          | 110                  | 2             | M10        | 4               | M20      | 310    | 295                      | 340            | 22                    | 20                     | 12           | 35.0   |
| 250            | 170            | 210          | 110                  | 2             | M10        | 4               | M24      | 330    | 355                      | 405            | 26                    | 20                     | 12           | 42.4   |
| 300            | 210            | 270          | 140                  | 2             | M16        | 4               | M24      | 330    | 410                      | 460            | 26                    | 25                     | 12           | 60.0   |
| 350            | 210            | 270          | 140                  | 2             | M16        | 4               | M24      | 460    | 470                      | 520            | 26                    | 25                     | 16           | 73.0   |
| 400            | 210            | 270          | 140                  | 2             | M16        | 4               | M27      | 490    | 525                      | 580            | 30                    | 25                     | 16           | 85.4   |
| 450            | 210            | 270          | 140                  | 2             | M16        | 5               | M27      | 490    | 585                      | 640            | 30                    | 25                     | 20           | 101.0  |
| 500            | 210            | 270          | 140                  | 2             | M16        | 5               | M30      | 500    | 650                      | 715            | 33                    | 25                     | 20           | 124.4  |
| 600            | 210            | 270          | 140                  | 2             | M16        | 5               | M33      | 515    | 770                      | 840            | 36                    | 25                     | 20           | 156.0  |
| 700            | 270            | 350          | 210                  | 3             | M16        | 6               | M33      | 565    | 840                      | 910            | 36                    | 25                     | 24           | 181.0  |
| 800            | 270            | 350          | 210                  | 3             | M16        | 6               | M36      | 570    | 950                      | 1025           | 39                    | 25                     | 24           | 236.8  |
| 900            | 270            | 350          | 210                  | 3             | M16        | 7               | M36      | 595    | 1050                     | 1125           | 39                    | 25                     | 28           | 262.0  |
| 1000           | 270            | 350          | 210                  | 3             | M16        | 7               | M39      | 615    | 1170                     | 1255           | 42                    | 25                     | 28           | 309.4  |
| 1200           | 320            | 400          | 210                  | 3             | M16        | 8               | M45      | 630    | 1390                     | 1485           | 48                    | 38                     | 32           | 502.0  |
| 1400           | 320            | 400          | 210                  | 6             | M16        | 9               | M45      | 665    | 1590                     | 1685           | 48                    | 38                     | 36           | 618.0  |
| 1600           | 320            | 420          | 210                  | 6             | M16        | 10              | M52      | 870    | 1820                     | 1930           | 56                    | 38                     | 40           | 830.0  |
| 1800           | 320            | 420          | 210                  | 6             | M16        | 11              | M52      | 900    | 2020                     | 2130           | 56                    | 38                     | 44           | 991.0  |
| 2000           | 390            | 490          | 210                  | 6             | M16        | 12              | M56      | 960    | 2230                     | 2345           | 62                    | 60                     | 48           | 1488.0 |

## Dismantling Joint PN10 (10 bar)

To suit flanges drilled BS 4504 PN10 DIN 2532 PN10 BS4772 PN10

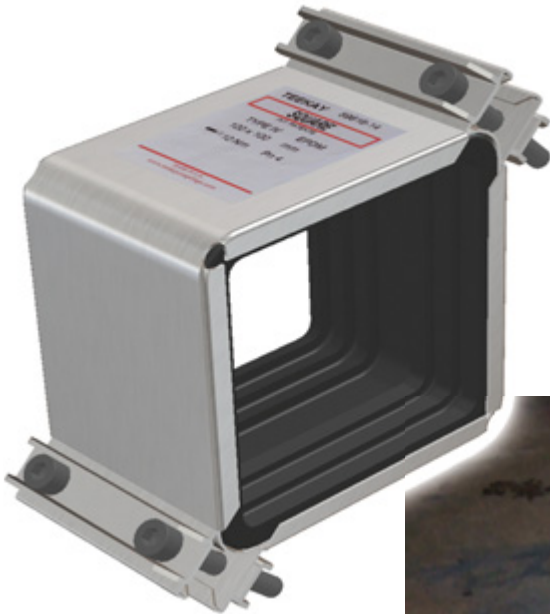
| Size           | Overall Length |              | Coupling Details     |               |            | Tie Bar Details |          |        | Flange Details           |                |                       | Approx. Weight         |              |        |
|----------------|----------------|--------------|----------------------|---------------|------------|-----------------|----------|--------|--------------------------|----------------|-----------------------|------------------------|--------------|--------|
| Nom. Pipe Size | L1 (minimum)   | L1 (maximum) | W1<br>Coupling Width | No. of Screws | Screw Size | No. of Tie Bars | Diameter | Length | D5 Pitch Circle Diameter | D6 Flange O.D. | D7 Bolt Hole Diameter | W3<br>Flange Thickness | No. of Bolts | KGS    |
| 200            | 170            | 210          | 110                  | 2             | M10        | 4               | M20      | 310    | 295                      | 340            | 22                    | 20                     | 8            | 31.0   |
| 250            | 170            | 210          | 110                  | 2             | M10        | 4               | M20      | 330    | 350                      | 395            | 22                    | 20                     | 12           | 34.0   |
| 300            | 210            | 270          | 140                  | 2             | M16        | 4               | M20      | 330    | 400                      | 445            | 22                    | 25                     | 12           | 49.0   |
| 350            | 210            | 270          | 140                  | 2             | M16        | 4               | M20      | 460    | 460                      | 505            | 22                    | 25                     | 16           | 63.0   |
| 400            | 210            | 270          | 140                  | 2             | M16        | 4               | M24      | 490    | 515                      | 565            | 26                    | 25                     | 16           | 77.0   |
| 450            | 210            | 270          | 140                  | 2             | M16        | 5               | M24      | 490    | 565                      | 615            | 26                    | 25                     | 20           | 90.0   |
| 500            | 210            | 270          | 140                  | 2             | M16        | 5               | M24      | 500    | 620                      | 670            | 26                    | 25                     | 20           | 100.0  |
| 600            | 210            | 270          | 140                  | 2             | M16        | 5               | M27      | 515    | 725                      | 780            | 30                    | 25                     | 20           | 117.0  |
| 700            | 270            | 350          | 210                  | 3             | M16        | 6               | M27      | 565    | 840                      | 895            | 30                    | 25                     | 24           | 164.0  |
| 800            | 270            | 350          | 210                  | 3             | M16        | 6               | M30      | 570    | 950                      | 1015           | 33                    | 25                     | 24           | 213.0  |
| 900            | 270            | 350          | 210                  | 3             | M16        | 7               | M30      | 595    | 1050                     | 1115           | 33                    | 25                     | 28           | 233.0  |
| 1000           | 270            | 350          | 210                  | 3             | M16        | 7               | M33      | 615    | 1160                     | 1230           | 36                    | 25                     | 28           | 290.0  |
| 1200           | 320            | 400          | 210                  | 3             | M16        | 8               | M36      | 630    | 1380                     | 1455           | 39                    | 38                     | 32           | 478.0  |
| 1400           | 320            | 400          | 210                  | 6             | M16        | 9               | M39      | 665    | 1590                     | 1675           | 42                    | 38                     | 36           | 593.0  |
| 1600           | 320            | 420          | 210                  | 6             | M16        | 10              | M45      | 870    | 1820                     | 1915           | 48                    | 38                     | 40           | 772.0  |
| 1800           | 320            | 420          | 210                  | 6             | M16        | 11              | M45      | 900    | 2020                     | 2115           | 48                    | 38                     | 44           | 859.0  |
| 2000           | 390            | 490          | 210                  | 6             | M16        | 12              | M45      | 960    | 2230                     | 2325           | 48                    | 60                     | 48           | 1405.0 |

### NOTES:

The above tables are guides to the most common sizes. Couplings to suit specific outside diameters not listed may be manufactured to order. Please contact us for further details.



# Square Coupling

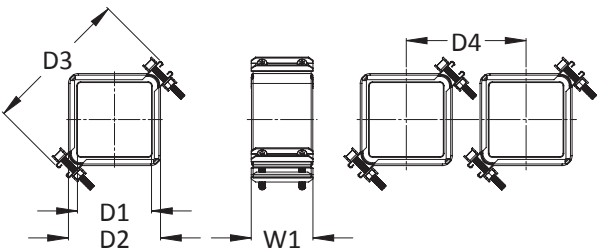


Teekay Square Couplings provide a comprehensive solution to joining box section without the need for hot working onsite. Available in 60 mm, 80 mm and 100 mm sizes, the square coupling lends itself to the joining of aeration pipes. Expansion and contraction can also be accommodated as the coupling is supplied as a non-anchoring type. High temperature gasket options are available.

## Material Selection

### Type IV

**Casing:** AISI 316L / DIN 1.4404  
**Fasteners:** AISI 316 / 316L  
**Gasket:** EPDM/NBR/H-NBR/FKM/VMQ



**Sizes:** 60 mm, 80 mm, 100 mm.  
**Gaskets:** EPDM -40°C to +100°C, NBR -20°C to +80°C, HNBR -20°C to +130°C, Viton -20°C to +250°C, Silicone -70°C to +270°C (depending on grade)  
**Pipe Materials:** Box section

| D1 Size | D2 Coupling O.D. | Pipe O.D. Tolerance | D3 Coupling | D4 Minimum | W1 Width | Weight |
|---------|------------------|---------------------|-------------|------------|----------|--------|
| (mm)    | (mm)             | (mm)                | (mm)        | (mm)       | (mm)     | (KG)   |
| 60      | 88               | 58.0 / 62.0         | 155         | 130        | 85       | 0.92   |
| 80      | 108              | 78.0 / 82.0         | 175         | 145        | 85       | 1.08   |
| 100     | 128              | 98.0 / 102.0        | 205         | 173        | 85       | 1.25   |

**NOTES:**  
The above tables are guides to the most common sizes. Couplings to suit specific outside diameters not listed may be manufactured to order. Please contact us for further details.



Whilst the Teekay Pipe Coupling range is easy and simple to install and use onsite, it is necessary to take external forces and environments into account when carrying out any installations. The following pages outline these elements and offer general installation guidelines and principles for good piping practice. Detailed piping system design should only be undertaken by independent professionals or specialists.

# Installation Guide

## Pipe Materials

Teekay **Axilock** Pipe Couplings are primarily designed to join metallic pipes. Other pipe materials, such as rigid plastics and GRP, can also be joined under certain circumstances. Soft plastic materials, such as PE, must be fitted with internal stiffeners (these should be specifically requested at time of order) but will not resist pull out forces generated by cold creep. Please contact us prior to joining non-metallic pipe materials.

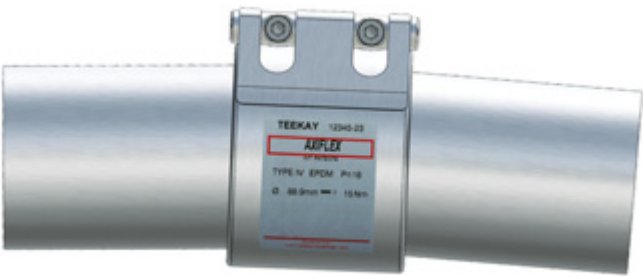
Teekay **Axiflex** Pipe Couplings are suitable for use with the following piping materials:

- Carbon Steel (seamless, longitudinally or spirally welded)
- Stainless Steel (seamless or longitudinally welded), metric thin wall or standard schedule sizes
- Cast or Ductile Iron
- Concrete
- Asbestos Cement
- Glass Reinforced Plastic (GRP)

- Fibre Reinforced Polyester (FRP) centrifugally cast or spirally wound
- PVC and uPVC
- High Density Polyethylene (HDPE) and MDPE
- Polybutylene, Polypropylene and ABS



## Angular Misalignment



Maximum angle of deflection for **Axilock** Pipe Couplings:

| Pipe Size O.D. | Maximum Angle of Deflection |
|----------------|-----------------------------|
| (mm)           |                             |
| 21.3 – 60.3    | 5°                          |
| 60.3 – 219.1   | 4°                          |
| 219.1 – 406.4  | 2°                          |
| 406.4 – 711.2  | 1°                          |

Maximum angle of deflection for **Axiflex** Pipe Couplings:

| Pipe Size ND | Coupling Width | Maximum Angle of Deflection |
|--------------|----------------|-----------------------------|
| (mm)         | (mm)           |                             |
| 40 – 100     | 85             | 5°                          |
| 80 – 300     | 110            | 5°                          |
| 150 – 500    | 140            | 5°                          |
| 600 – 700    | 140            | 3.5°                        |
| 800 – 1200   | 140            | 2°                          |
| 200 – 700    | 210            | 5°                          |
| 800 – 1200   | 210            | 3°                          |
| 1300 – 1800  | 210            | 2°                          |
| 1900 – 3000  | 210            | 1°                          |
| 200 – 800    | 310 / 410      | 5°                          |
| 900 – 1300   | 310 / 410      | 3°                          |
| 1400 – 2300  | 310 / 410      | 2°                          |
| 2400 – 3000  | 310 / 410      | 1°                          |

**Please note:** Maximum angle of deflection assumes that the coupling spans the angle evenly.

## Allowable pipe diameter tolerances

| Type of Teekay Coupling                                | Pipe Outside Diameter | Coupling Width | Outside Diameter Tolerance |
|--------------------------------------------------------|-----------------------|----------------|----------------------------|
|                                                        | (mm)                  | (mm)           | (mm)                       |
| Axilock-S<br>Axilock<br>Axilock-FP<br>Axilock-FP Ultra | 21.3 – 35.0           | 45             | + 0.3 / - 0.3              |
|                                                        | 38.0 – 57.0           | 65 / 85        | + 1 / - 1                  |
|                                                        | 60.3 – 429.0          | 85 / 110       | + 2 / - 1                  |
|                                                        | 429.0 – 711.0         | 110            | + 2 / - 1                  |
| Axiflex<br>Stepped<br>Repair Coupling                  | 21.3 – 35.0           | 45             | + 0.3 / - 0.3              |
|                                                        | 38.0 – 44.5           | 65             | + / - 1                    |
|                                                        | 48.3 – 76.1           | 85             | + / - 1.5                  |
|                                                        | 82.5 – 125.0          | 85             | + / - 2                    |
|                                                        | 88.9 – 149.9          | 110            | + / - 2                    |
|                                                        | 153.0 – 193.7         | 110            | + / - 2.5                  |
|                                                        | 200.0 – 326.0         | 110            | + / - 3                    |
|                                                        | 153.0 – 193.7         | 140 L          | + / - 2.5                  |
|                                                        | 200.0 – 635.0         | 140 L          | + / - 3                    |
|                                                        | 168.3 – 170.0         | 140            | + / - 2.5                  |
|                                                        | 291.1 – 345.4         | 140            | + / - 4                    |
|                                                        | 355.0 – 1255.0        | 140            | + / - 4                    |
|                                                        | 219.1 – 345.4         | 210            | + / - 4                    |
|                                                        | 355.0 – 1255.0        | 210            | + / - 4                    |
|                                                        | 1256.0 – 2350.0       | 210            | + / - 8                    |
|                                                        | 2351.0 – 3050.0       | 210            | + / - 16                   |
|                                                        | 315.0 – 326.0         | 310 / 410      | + / - 4                    |
|                                                        | 333.8 – 1255.0        | 310 / 410      | + / - 4                    |
|                                                        | 1256.0 – 1631.0       | 310 / 410      | + / - 8                    |
|                                                        | 1632.0 – 2350.0       | 310 / 410      | + / - 16                   |
|                                                        | 2351.0 – 3050.0       | 310 / 410      | + / - 16                   |

## Distance between Pipe Ends

For Axilock-S, Axilock, Axilock-FP and Axilock-FP Ultra couplings the optimum distance between pipe ends is 0 - 8 mm. This allows for expansion and contraction, suction and vacuum, pipe deflection and a reasonable cutting tolerance.

For Axiflex, Stepped and Repair couplings the recommended gap between pipe ends depends on the width of the coupling and whether or not a vacuum ring is fitted. When the gap is exceeded (or in all vacuum applications) a vacuum insert must be fitted. The table gives the maximum pipe gaps for these couplings:

| Coupling Width | Maximum Pipe Gap<br>(without vacuum ring) | Maximum Pipe Gap<br>(with vacuum ring) |
|----------------|-------------------------------------------|----------------------------------------|
| (mm)           | (mm)                                      | (mm)                                   |
| 85             | 5                                         | 20                                     |
| 110            | 5                                         | 30                                     |
| 140            | 10                                        | 40                                     |
| 210            | 20                                        | 50                                     |
| 310            | 30                                        | 110                                    |
| 410            | 30                                        | 150                                    |

- maximum pipe gap without a vacuum ring can be doubled on applications where intrusion of the rubber gasket into the pipe gap is not a problem.
- maximum pipe gap with a vacuum ring is limited by the maximum angle of deflection. If the angle of deflection is less than the maximum allowable angle of deflection, the maximum pipe gap (with vacuum ring) can be increased accordingly.

# Installation Guide

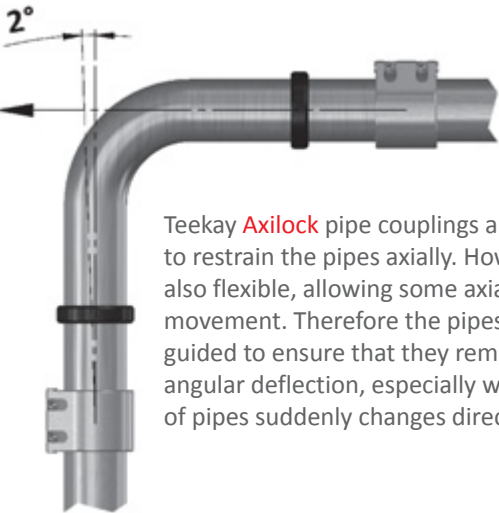
Teekay **Axilock** pipe couplings can accommodate up to 6 mm expansion/contraction in a straight line. At changes in direction make sure that any resultant angular deflection is restricted to a maximum of 2°.

Teekay **Axiflex** couplings can accept thermal expansion or contraction of the pipeline by axial movement through the coupling or by the angulation of two couplings. In either case the pipeline should be adequately restrained. If it is not possible to place the intermediate anchors between the couplings, the Teekay **Axiflex** coupling can be supplied with an integral central register to locate the coupling.

The recommended maximum pipe axial expansion or contraction which can be accepted by one coupling is as follows:

| Coupling Width | Pipe Expansion / Contraction |
|----------------|------------------------------|
| (mm)           | (mm)                         |
| 85             | 2.5                          |
| 110            | 7.5                          |
| 140            | 14.5                         |
| 210            | 25                           |
| 310            | 35                           |
| 410            | 35                           |

## Support & Restraint



Teekay **Axilock** pipe couplings are designed to restrain the pipes axially. However, they are also flexible, allowing some axial and angular movement. Therefore the pipes should be guided to ensure that they remain within 2° angular deflection, especially where a long run of pipes suddenly changes direction.



Buried pipelines can generally be restrained by means of thrust blocks at major changes in direction. Straight runs and minor curves are usually restrained by soil friction. The same is largely true of gravity or very low pressure pipelines running along the ground, although with certain thermoplastic piping materials special attention should be given to restraining the forces generated by excessive expansion, contraction and creep.

For above ground applications pipelines should be anchored.

Intermediate anchors should be designed to withstand the forces and movements transferred and imposed upon them by each of the pipe sections to which they are attached, taking into account such forces as friction, wind load, self weight, and changes in fluid momentum.

Above ground pipelines subject to side thrusts, or required to be used to absorb angular deflections or lateral displacements, must be adequately restrained and supported.

Supporting of the pipeline for shear deadweight must be carried out to ensure that no excessive sagging occurs beyond the limits of angular deflection of the coupling. Support pitching will depend on pipe material, diameter, wall thickness and operating temperature.

A simple method of harnessing pipelines is by welding lugs to the pipe and connecting them with tie rods.



## Shock, vibration, water hammers

Due to the design of the gasket, Teekay couplings dampen sound, vibration and water hammer. Shock levels to military requirements can also be accommodated. In the case of Teekay Axiflex couplings for applications where excessive vibration might occur, the couplings can be supplied with central registers to locate the pipe coupling in position.

## Electrical Conductivity

In Teekay Axilock pipe couplings electrical conductivity is conveyed through the coupling casing by the anchor rings. In Teekay Axiflex pipe couplings stainless steel continuity clips are fitted to prevent the build-up of static electricity. These should be specifically requested at time of order.



## Central Register

For above ground applications where there is a possibility that the coupling may move along the pipe due to excessive vibration, expansion and contraction etc. the Teekay Axiflex Pipe Coupling can be supplied with a central register. The central register is a circumferential ridge integral to the gasket and serves to locate the coupling on the pipeline, thereby preventing its movement. (This should be specifically requested at time of order).



## Bracketed Couplings

Teekay Bracketed Pipe Couplings can be provided with brackets of various designs welded to the coupling casing which can then be bolted to any convenient support.



## Installation Kit

The following are available to purchase separately or as a complete kit:



Pipe lubricant for easier installation of large diameter couplings



Speed brace for taking up the slack on the fasteners prior to tightening the coupling with a torque wrench



Socket adaptors



Soft mallets (to ensure good seating on large diameter couplings)



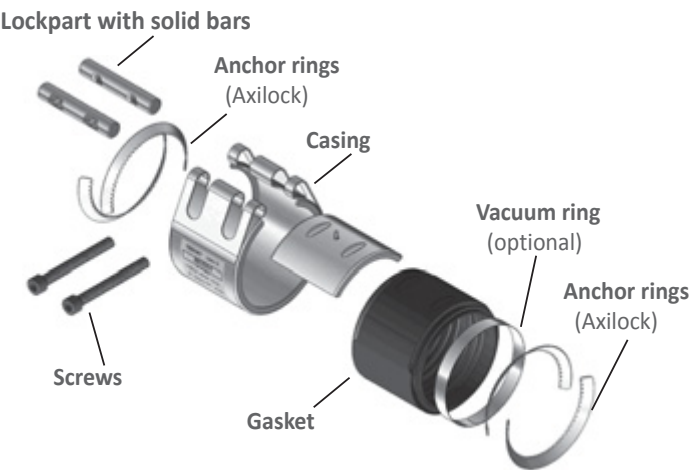
Torque wrenches

# Installation Guide

Please check the following before installation to ensure that your Teekay pipe coupling works perfectly.

## 1. Handling of Teekay Couplings

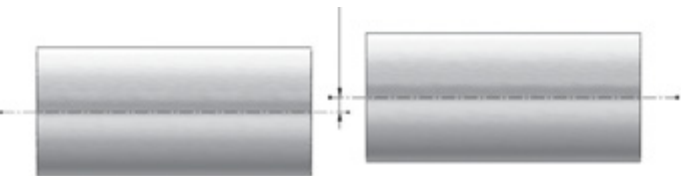
- Do not drop the coupling.
- Keep the coupling clean – leave it in its packaging until you are ready to use it.
- Do not dismantle the coupling.
- Check that anchor rings are present on both sides if you are using axially resistant couplings (Axilock) and if you have requested a vacuum ring, please check that it is in place.
- The screws are coated – do not apply additional lubricants!



## 2. Pipe Lines

### Pipe offset

- Make sure that the pipes are straight. The maximum acceptable pipe offset is 3 mm or 1% of the pipe diameter, whichever is smaller.



### Test Pressure

Water is used as the testing medium for Teekay coupling pressure tests. Test pressure = 1.5 x wp. To find out about the pressure resistance when other media are used, please contact us.

## Angular Deflection

- Maximum angulation for **Axilock Couplings**

| Pipe O.D. (mm) | Max. angulation |
|----------------|-----------------|
| 21.3 – 60.3    | 5°              |
| 60.3 – 219.1   | 4°              |
| 219.1 – 406.4  | 2°              |
| 406.4 – 711.2  | 1°              |

- Maximum angulation for **Axiflex Couplings**

| Nominal pipe size (mm) | Coupling with (mm) | Max. angulation |
|------------------------|--------------------|-----------------|
| 40 – 100               | 85                 | 5°              |
| 80 – 300               | 110                | 5°              |
| 150 – 500              | 140                | 5°              |
| 600 – 700              | 140                | 3.5°            |
| 800 – 1200             | 140                | 2°              |
| 200 – 700              | 210                | 5°              |
| 800 – 1200             | 210                | 3°              |

See brochure page 36 for other widths.



## Lateral Displacement

- Lateral displacement may be accommodated by the use of two Teekay Couplings with an intermediate length of pipe.



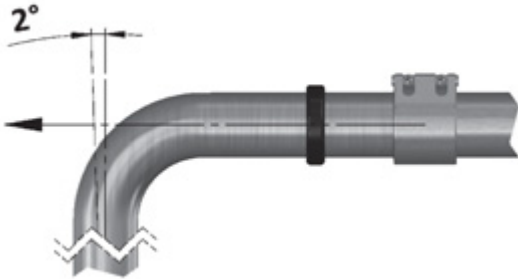
## Expansion

- Axilock couplings can accommodate up to 6 mm of expansion, in a straight Line.





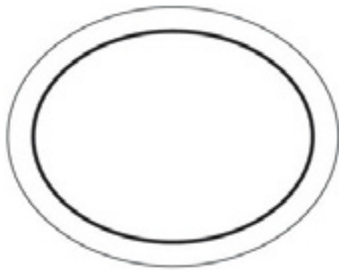
- At changes of direction, any resultant angulation must not exceed 2°.



For Axiflex see brochure page 38.

### Ovality

- Teekay Axiflex pipe couplings are sufficiently flexible to accept a misshape within the pipe cross section provided the out-of-roundness is fairly evenly distributed around the circumference (oval rather than D shaped). **Depending on application and pipe material, up to 8% ovality may be accommodated.**



### Installation

Do not exceed the limits listed in Section 2 and do not add them up. They refer to the static load on radially stiff pipes.

A safety factor must be included for dynamic loads such as water hammer, shear forces, etc. (please contact us for information).

Stepped Couplings require anchoring against thrust on the side of the smaller pipe in pressure applications.

### 3. Installation Examples

For information, please go to Page 44.

**Please observe the following instructions prior to, during and after the installation of the coupling.**

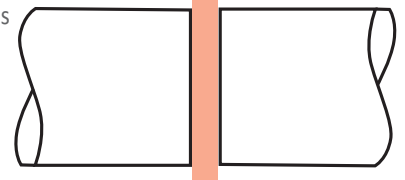
#### 1. Prior to Installation

- The pipe ends should be cut square and all sharp edges and burrs must be removed.
- The pipe surface must be clean and smooth with no loose material in the region of the sealing lips.

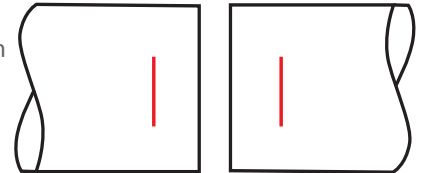
- The optimum distance between the pipe ends for Axilock couplings is max. 8 mm.

- Measure half the width of the coupling and deduct 2.5 mm. Mark the pipe ends using this dimension. This will ensure that the pipe ends will not obstruct each other and that the coupling will sit centrally over the pipe ends after installation.

max. 8 mm

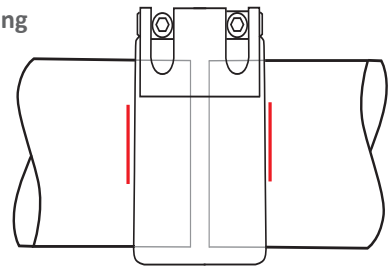


- If you are working with Axiflex couplings, the distance between the pipe ends will depend on the coupling width and the use of a vacuum ring. See brochure page 37.



#### 2. Installation of the Coupling

- Slide the coupling over the pipe and align it with the markings on the pipe ends. Tighten the pipe supports before tightening the coupling. Check that the pipes are not misaligned or angulated.
- Using a torque wrench, tighten the screws evenly, alternating from screw to screw until both "click off". **Make sure you comply with the required torque.** (See information on the label, description on Page 45.)



- See Section 4 (After Installation).

# Installation Guide

## Repair Coupling

Suitable also for permanent use.

### 3. Repair Coupling Installation

(Axiflex couplings that can be opened and wrapped around the pipe)

- Loosen the coupling screws.
- Place the opened coupling around the pipe.



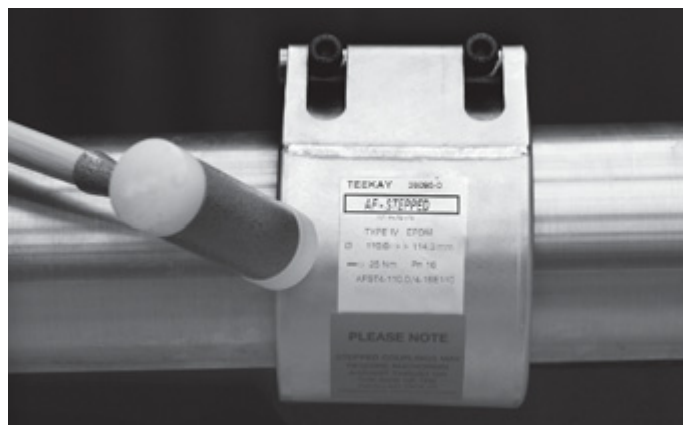
- Insert the loose end of the gasket into the "tongue" located on the other side of the coupling.



- Make sure that the two ends of the gasket are flush against each other.



- Using a torque wrench, tighten the screws evenly, alternating from screw to screw until **both** "click off". **Make sure you comply with the required torque.** (See information on the label, description on Page 45.)
- For Axiflex, Repair- & Stepped Couplings > 600 mm lubricate pipe ends prior to installation.
- Use a soft mallet on the casing during tightening to ensure uniform gasket compression.



### 4. After Installation

- Check that the lockpart is parallel.

## Torque

The couplings do not require any maintenance and must not be retightened once the torque has been reached. We recommend you mark the coupling once the screws have been torqued up. This will ensure that you and others know that the screws have been tightened.

**If you are unsure as to whether the screws have already been tightened, loosen the screws completely and repeat the installation from scratch.**

Please observe the following instructions prior to, during and after the dismantling of the coupling.

## 1. Prior to Dismantling

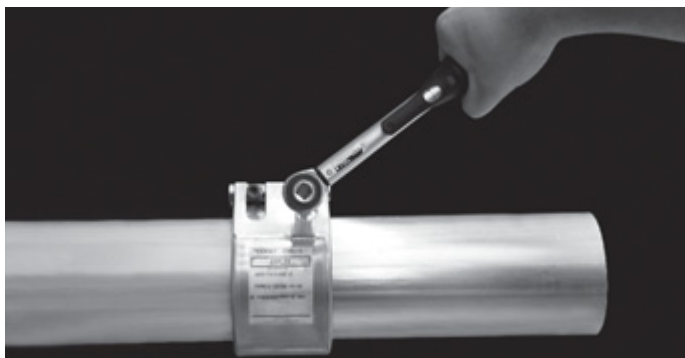
- Ensure that there is no pressure in the pipes at the joint to be removed.



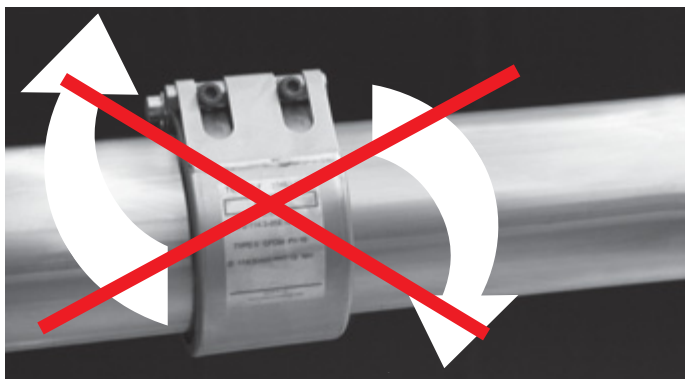
- Protect yourself and equipment from spilling liquid.
- Make sure the pipe coupling is not supporting the pipe ends.

## 2. Dismantling the Coupling

- Loosen the screws evenly by alternating between them but do not remove completely.



- Do not rotate the pipe coupling on the pipe as long as the anchor teeth are engaged (Axilock only).



## Removal of the coupling

Slide the coupling off the pipe cautiously. Make sure that the gasket sealing lips are not damaged in the process.



- Clean the coupling.



## Condition of the seal

If the end seal of the Axilock coupling is partially severed, you can reinsert it.

(The purpose of the end seal is to protect the anchor ring.)



# Installation Guide

## Guidelines for pressurised systems (side view)

### Axilock



### Axiflex

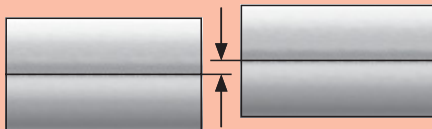


**Axiflex** pipe couplings are not designed to accept end load pressures. As a result, pipes must generally be anchored against internal pressure at changes in direction, branches, valves and at pipe ends and secured by fixed points and guides.

### Shear force

Teekay pipe couplings should not be subjected to excessive shear force. The pipes should be fixed and supported.

Shear Force see Lateral Displacement (Page 40).



### Loose guides

general

\* optional

Has to be capable of accommodating the weight of the pipe including its contents e.g. a saddle or pipe support

### Fixed point

Must absorb axial forces, e.g. anchored pipe clamp



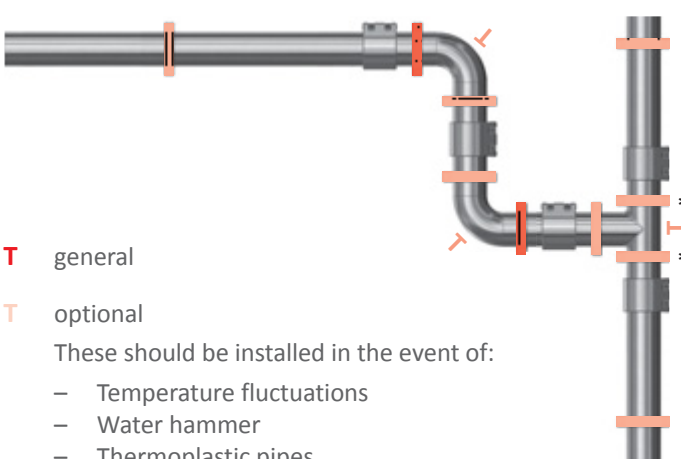
## Straight underground pipelines

Straight underground pipelines are usually restrained by soil friction. Changes of direction have to be controlled by means of thrust blocks.

### T Thrust block

Its purpose is to prevent pipe movement, e.g. puddle flange, wall penetration or concrete block.

### Axilock



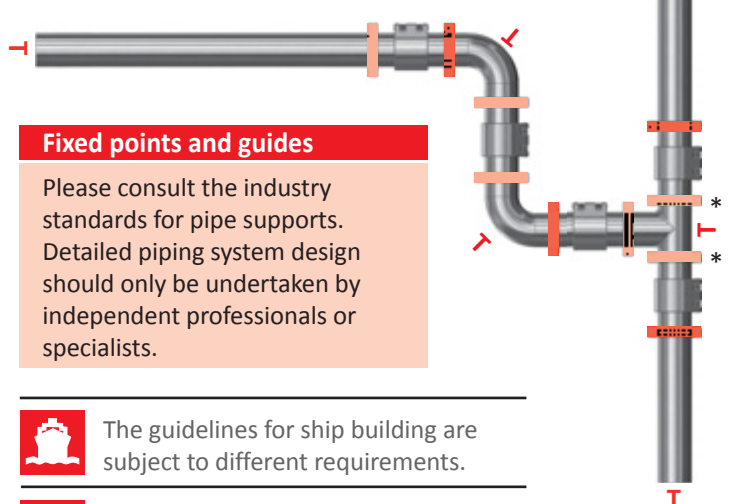
T general

T optional

These should be installed in the event of:

- Temperature fluctuations
- Water hammer
- Thermoplastic pipes
- Stainless steel pipes
- Long pipe runs
- Heavy wall thickness pipes

### Axiflex



### Fixed points and guides

Please consult the industry standards for pipe supports. Detailed piping system design should only be undertaken by independent professionals or specialists.



The guidelines for ship building are subject to different requirements.

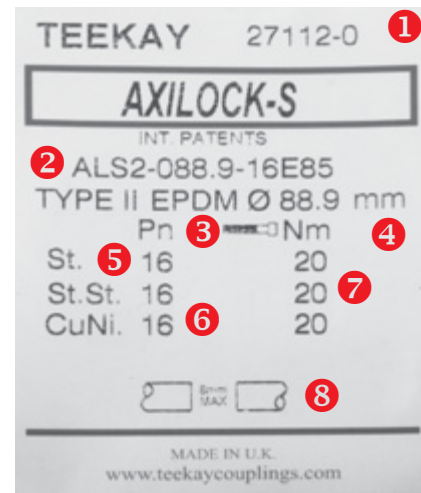
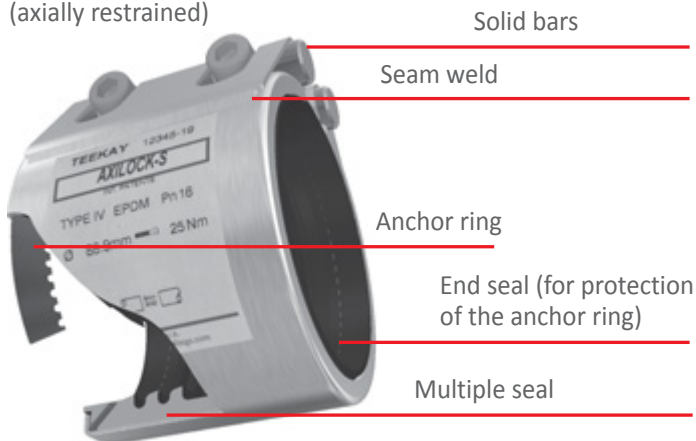


If you have questions regarding coupling installation, please contact us.

## Product Description and Label Details

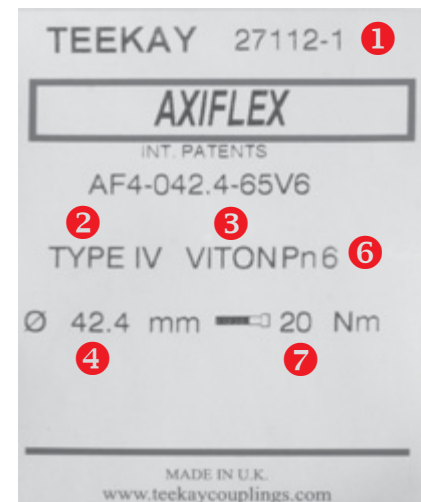
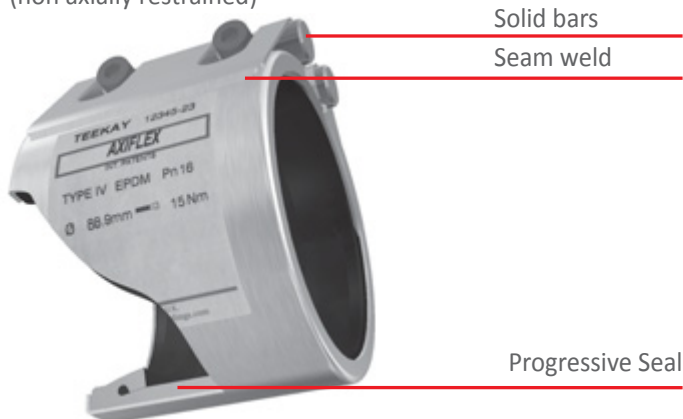
### Teekay-Axilock

(axially restrained)



### Teekay-Axiflex

(non axially restrained)



#### 1 Traceability number

Please advise when requesting documentation retrospectively.

#### 2 Description of the material

|         |   |                                                             |
|---------|---|-------------------------------------------------------------|
| Type I  | = | Casing 304 stainless steel<br>Lockpart alloy steel coated   |
| Type II | = | Casing 304 stainless steel<br>Lockpart 316 stainless steel  |
| Type IV | = | Casing 316L stainless steel<br>Lockpart 316 stainless steel |

#### 3 Gasket material

|          |   |                                          |
|----------|---|------------------------------------------|
| EPDM     | = | - 40 °C to + 100 °C                      |
| NBR      | = | - 20 °C to + 80 °C                       |
| HNBR     | = | - 20 °C to + 130 °C                      |
| Viton    | = | - 20 °C to + 250 °C                      |
| Silicone | = | - 70 °C to + 270 °C (depending on grade) |

#### 4 Pipe outside diameter

#### 5 Pipe material

|        |   |                 |
|--------|---|-----------------|
| St     | = | Carbon Steel    |
| St.St. | = | Stainless steel |
| CuNi.  | = | Copper nickel   |

#### 6 Operating pressure – Axilock range

The operating pressure indicated applies to standard wall carbon steel pipes.  
For use on thin or soft pipe materials such as thin wall stainless, copper alloy or plastic (by way of example only) please check with us first.

#### 7 Tightening torque for screws

See Page 42 (Torque)

#### 8 Maximum pipe gap

See Page 41 (Prior to Installation)

# Build Quality

There are many different types of pipe couplings and pipe connections on the market; stainless steel couplings, cast iron couplings, push-fit couplings, grooved couplings.....

At Teekay we consider build quality to be one of the most important aspects of manufacturing a well-engineered and user-friendly product. We know that good build quality hugely improves the life and performance of the product. Listed below are some features which make the Teekay product range stand out from the rest:

## TIG welded seam

When fastening the coupling, the section of the casing that has to withstand the most stress is the area where the “ear” is welded to the outer casing. We TIG weld this section with a strong seam weld and then passivate it so there is no chance of corrosion when exposed to the elements. The seam weld provides uniform strength across the whole width of the casing, ensuring the strongest possible connection. We never spot weld this area of the coupling.



## Solid bars and 2 screws on each coupling

Teekay couplings come with solid bars which are spot-faced in order to reduce stress points on the screw head. The solid bar prevents corrosion of the screw thread and provides extra strength in the lockpart. All Teekay couplings are supplied with a minimum of 2 screws. This design feature is crucial to the secure fastening of the coupling across its entire width. The coating on each screw is a dry lubricant which negates the need for greasing the lockpart.



## Unique Axilock multi-seal gasket

All Teekay Axilock-S, Axilock, Axilock-FP and Axilock-FP Ultra couplings come with a unique multi-seal gasket design which provides greater sealing security when compared with a single seal design. There is a high volume of material-to-space ratio which ensures long term sealing efficiencies.



1 - multi-seal gasket

2 - encapsulated anchor ring

## Encapsulated anchor rings

All Teekay Axilock-S, Axilock, Axilock-FP and Axilock-FP Ultra couplings come with patented encapsulated anchor rings. This small section of rubber massively increases the life of the coupling by preventing any possible corrosion of the anchor rings. The teeth in the rings bite through the rubber and lock the pipes in place, leaving none of the teeth exposed when the coupling is installed. The rubber seal over the anchor ring also protects users when handling the coupling.



## TERMS AND CONDITIONS OF SALE

The following is an extract only from our terms and conditions of sale. For full terms and conditions of sale, please see the Company's website ([www.teekaycouplings.com](http://www.teekaycouplings.com)), copies available otherwise upon request. The customer's attention is drawn in particular to the provisions of clauses 6 and 10.

1. **DEFINITIONS** – please see full terms and conditions on our website, copies available otherwise upon request.

2. **CONSTRUCTION** – please see full terms and conditions on our website, copies available otherwise upon request.

3. **BASIS OF CONTRACT** – please see full terms and conditions on our website, copies available otherwise upon request.

3.1 These Conditions apply to the Contract to the exclusion of any other terms that the Customer seeks to impose or incorporate, or which are implied by trade, custom, practice or course of dealing...3.5 Any samples, drawings, descriptive matter, or advertising produced by the Company and any descriptions or illustrations contained in the Company's brochures are produced for the sole purpose of giving an approximate idea of the Goods described in them. They shall not form part of the Contract or have any contractual force...

4. **GOODS** – please see full terms and conditions on our website, copies available otherwise upon request.

4.1 The Goods are described in the Acknowledgment...geometry, dimensions and designs are subject to design and manufacturing changes without notice.

5. **DELIVERY** – please see full terms and conditions on our website, copies available otherwise upon request.

6. **QUALITY** – please see full terms and conditions on our website, copies available otherwise upon request.

6.1 The Company warrants that on delivery, and for a period of 12 months from the date of delivery ("warranty period"), the Goods shall conform in all material respects with the details given in the Acknowledgment and be free from material manufacturing defects.

6.2 Subject to clause 10.3, if: the Customer gives notice in writing to the Company during the warranty period within a reasonable time of discovery that some or all of the Goods do not comply with the warranty set out in clause 6.1; and the Company is given a reasonable opportunity of examining such Goods; and the Customer (if asked to do so by the Company) returns such Goods to the Company's place of business; the Company shall, at its option, repair or replace the defective Goods, or refund the price of the defective Goods in full.

6.3 Except as provided in this clause 6, the Company shall have no liability to the Customer in respect of the Goods' failure to comply with the warranty set out in clause 6.1. To the fullest extent permitted by law, the terms implied by sections 13 to 15 of the Sale of Goods Act 1979 are excluded from the Contract and the Company gives no warranty either express or implied of fitness of Goods for any particular purpose (whether known to the Company or not) nor makes any other warranty either express or implied.

7. **TITLE AND RISK** – please see full terms and conditions on our website, copies available otherwise upon request.

7.1 The risk in the Goods shall pass to the Customer when the Company despatches the Goods from its premises.

7.2 Title to the Goods shall not pass to the Customer until the earlier of:

7.2.1 the Company receives payment in full for the Goods and any other goods that the Company has supplied to the Customer in respect of which payment has become due, in which case title to the Goods shall pass at the time of payment of all such sums; and

7.2.2 the Customer resells the Goods, in which case title to the Goods shall pass to the Customer at the time specified in clause 7.4.

7.3 Until title to the Goods has passed to the Customer, the Customer shall: store the Goods separately from all other goods so that they remain readily identifiable as the Company's property; maintain the Goods in satisfactory condition and keep them insured against all risks for their full price from the date of delivery; notify the Company immediately if it becomes subject to any of the events listed in clause 9.1; give the Company such information relating to the Goods as the Company may require from time to time; and not remove, deface or obscure any identifying mark or packaging on or relating to the Goods.

7.4 If the Customer resells the Goods before the Company receives payment for the Goods: it does so as principal and not as the Company's agent; and title to the Goods shall pass from the Company to the Customer immediately before the time at which resale by the Customer occurs.

7.5 If before title to the Goods passes to the Customer the Customer becomes subject to any of the events listed in clause 9.1, then, without limiting any other right or remedy the Company may have: the Customer's right to resell or use the Goods ceases immediately; and the Company may at any time require the Customer to deliver up all Goods in its possession which have not been resold, or irrevocably incorporated into another product, and if the Customer fails to do so promptly, enter any premises of the Customer or of any third party where the Goods are stored in order to recover them.

8. **PRICE AND PAYMENT** – please see full terms and conditions on our website, copies available otherwise upon request.

8.1 The price of the Goods shall be the price set out in the Acknowledgment.

8.2 The Company may, by giving notice to the Customer at any time before delivery, increase the price of the Goods to reflect any increase in the cost of the Goods that is due to: any factor beyond the Company's control (including foreign exchange fluctuations, increases in taxes and duties, and increases in labour, materials and other manufacturing costs); any request by the Customer to change the delivery date(s), quantities or types of Goods ordered, or any other aspect of the Order; or any delay caused by any instructions of the Customer or failure of the Customer to give the Company adequate or accurate information or instructions.

8.3 The price of the Goods is exclusive of value added tax ("VAT"), any other relevant taxes and the costs and charges of packaging and transport of the Goods, which shall be invoiced to the Customer. The Customer shall, on receipt of a valid VAT invoice from the Company, pay to the Company such additional amounts in respect of VAT as are chargeable on the supply of the Goods.

8.5 Unless otherwise stated in the Acknowledgment the Customer shall pay the Company's invoice in full within 30 days of the date of the invoice to the bank account nominated in writing by the Company. Time of payment is of the essence.

8.6 If the Customer fails to make any payment due to the Company under the Contract by the due date for payment, then the Customer shall pay interest on the overdue amount at the rate of 4% per annum above National Westminster Bank PLC's base rate from time to time, accruing on a daily basis from the due date until actual payment of the overdue amount, whether before or after judgment. The Customer shall pay the interest together with the overdue amount.

8.7 The Customer shall pay all amounts due under the Contract in full without any set-off, counterclaim, deduction or withholding (except for any deduction or withholding required by law). The Company may at any time, without limiting any other rights or remedies it may have, set off any amount owing to it by the Customer against any amount payable by the Company to the Customer.

9. **TERMINATION AND SUSPENSION** – please see full terms and conditions on our website, copies available otherwise upon request.

10. **LIMITATION OF LIABILITY** – please see full terms and conditions on our website, copies available otherwise upon request.

10.1 Nothing in these Conditions shall limit or exclude the Company's liability for: death or personal injury caused by its negligence, or the negligence of its employees, agents or subcontractors (as applicable); fraud or fraudulent misrepresentation; breach of the terms implied by section 12 of the Sale of Goods Act 1979; or any matter in respect of which it would be unlawful for the Company to exclude or restrict liability.

10.2 Subject to clause 10.1:

10.2.1 the Company shall under no circumstances whatsoever be liable to the Customer, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any loss of profit, or any indirect or consequential loss arising under or in connection with the Contract; and

10.2.2 the Company's total liability to the Customer in respect of all other losses arising under or in connection with the Contract, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, shall in no circumstances exceed the lower of (i) 5 times the price of the Goods and (ii) £10,000.

10.3 Subject to clause 10.1, the Company shall have no liability under the Contract, including for the failure of any Goods to comply with the warranty set out in clause 6.1, if the damage, loss or defect arises:

10.3.1 because the Customer failed to follow the Company's instructions (available at the Company's website [www.teekaycouplings.com](http://www.teekaycouplings.com) or on request) as to the storage, commissioning, installation, use and maintenance of the Goods; or

10.3.2 because the Customer failed to install the piping system otherwise than in accordance with best industry practice (the Customer acknowledging that the Company is not a designer of piping systems and that the design of piping systems should be undertaken by persons that are experts in that field, and acknowledging that the Company's installation guide relates to the installation of the Goods only and not of the piping system); or

10.3.3 because of corrosive or abrasive conditions or any working conditions exceeding or differing from those advised by the Company.

11. **FORCE MAJEURE** – please see full terms and conditions on our website, copies available otherwise upon request.

12. **GENERAL** – please see full terms and conditions on our website, copies available otherwise upon request.

...12.8 **Governing law and Jurisdiction.** The Contract, and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims), shall be governed by, and construed in accordance with the law of England and Wales. Each party irrevocably agrees that the courts of England and Wales shall have exclusive jurisdiction to settle any dispute or claim arising out of or in connection with this Contract or its subject matter or formation (including non-contractual disputes or claims).

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The contents of this brochure give general information about the products we make. It is not intended to be a piping system design manual. Piping system design should only be undertaken by independent professionals or specialists.

Although we make reasonable efforts to update the information in our brochures, we make no representations warranties or guarantees, whether express or implied, that the content of this brochure is the most accurate, complete or up-to-date version and consequently to the fullest extent permitted by law errors and omissions are excepted.

This brochure was originally written in the English language and, in the event of any conflict inconsistency or discrepancy between the English language version and any translation, the English language version shall apply.

INTERNATIONAL PATENTS AND TRADEMARKS



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