

# Mechanical Repair Couplings

**Sizes: 4- through 48-inch**



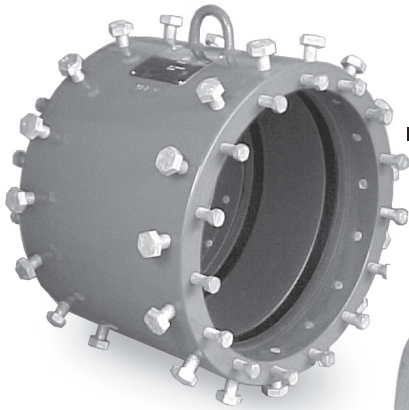
T.D. Williamson, Inc.

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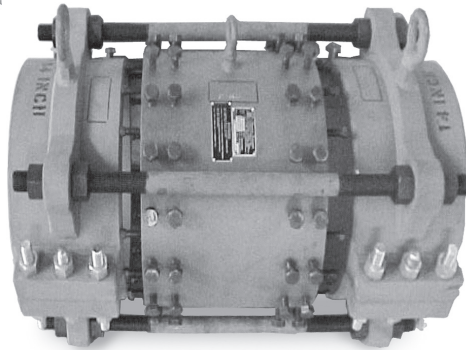
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■ Mechanical Repair Coupling



■ Mechanical Repair Coupling plus Clamp

## Description

TDW Mechanical Repair Couplings are used to temporarily or permanently connect two sections of power, petrochemical, and oil and gas pipelines. These couplings can be used to connect pipe ends without special end preparation, and product flow can be initiated immediately after installation of the couplings.

Couplings may be anchored or unanchored. An anchored coupling has been either clamped or welded to the pipeline. An unanchored coupling is installed without clamping or welding. With unanchored couplings, lower pipeline pressures may be required. A coupling used as a temporary connection (and not welded in place) may be reused as long as its seals are replaced.

Designed in accordance with Sections 5 and 10 of API 6H, standard coupling sizes from 3- through 48-inch (76 to 1219 mm) are available. Consult TDW for information on special pipe sizes. Maximum operating pressures for unanchored and anchored couplings are shown on page 2.

## Features

Material certifications are available for all repair couplings. Fabricated couplings are stress-relieved after welding and prior to machining. Longitudinal weld joints are 100 percent radiograph inspected. The standard bolt material is A193 B7.

A single-piece, precision die molded seal is secured in a semi-wedge lock groove on each end for peripheral sealing. The seal will remain in place during coupling installation and has proven superior to the conventional strip seal with joint. The axial forces of the thrust screws compress the seal into the annular space between the pipe and the coupling.

All couplings are factory hydrotested in the anchored condition per API 6H specifications. Consult TDW for special testing of unanchored couplings.

## Options

When specifying a coupling, several options are available, including:

- **Body Material** – The standard body material is carbon steel, either ASTM A516 GR 70 or A537 CL 1. Consult TDW for custom needs.
- **Seal Material** – Mechanical repair coupling seals are available in three materials, each with different temperature ranges:
  - Buna-N (-40° F to 250° F / -40° C to 121° C)
  - Neoprene (-40° F to 225° F / -40° C to 107° C)
  - Viton® (-20° F to 400° F / -28° C to 204° C)
- **Coupling Screws** – Couplings are available with a single row or a double row of coupling screws. A second row of coupling screws increases the overall size of the coupling but also increases the maximum operating pressure of an unanchored coupling.
- **Finish** – Couplings may be painted or unpainted. If a painted coupling is to be welded to a pipeline, the paint should be removed from the coupling ends where the fillet weld will secure the coupling to the pipe.
- **Clamp** – Addition of a clamp allows a coupling to be anchored to the pipeline without welding.

Toll Free

**1-888-TDWmSon (839-6766)**



# Mechanical Repair Couplings

## Clamp Option

| Option | Clamp Option |
|--------|--------------|
| C      | Standard     |
| D      | With Clamp   |

**R X - X X X X - X X X X - X X**

| Pipe Size<br>in Inches | Flange<br>Rating | Seal<br>Material | Body<br>Material               | Bolting<br>Material | Clamping<br>Screws | Finish         |
|------------------------|------------------|------------------|--------------------------------|---------------------|--------------------|----------------|
| 03 26                  | 00=Standard      | 0 = Buna-N       | 1 = ASTM A516 GR 70 (Standard) | 0 = A193 B7         | 0 = Single Row     | 00 = Painted   |
| 04 28                  | (See Table 1)    | 1 = Neoprene     | 2 = ASTM A537 CL 1             |                     | 1 = Double Row     | 99 = Unpainted |
| 06 30                  |                  | 2 = Viton        |                                |                     |                    |                |
| 08 32                  |                  |                  |                                |                     |                    |                |
| 10 34                  |                  |                  |                                |                     |                    |                |
| 12 36                  |                  |                  |                                |                     |                    |                |
| 14 40                  |                  |                  |                                |                     |                    |                |
| 16 42                  |                  |                  |                                |                     |                    |                |
| 18 44                  |                  |                  |                                |                     |                    |                |
| 20 46                  |                  |                  |                                |                     |                    |                |
| 22 48                  |                  |                  |                                |                     |                    |                |
| 24                     |                  |                  |                                |                     |                    |                |

**Example:** RD-3000-1201-99 is a 30-inch Mechanical Repair Coupling plus Clamp option with a Neoprene seal, ASTM A537 CL1 body material, A193 B7 bolting material, a double row of coupling screws, and an unpainted finish.

## Mechanical Repair Coupling Replacement Seals

**S E - X X 0 0 - X 0 0 0 - 0 0**

| Pipe Size<br>in Inches | Seal<br>Material |
|------------------------|------------------|
| 03 26                  | 0 = Buna-Nd      |
| 04 28                  | 1 = Neoprene     |
| 06 30                  | 2 = Viton        |
| 08 32                  |                  |
| 10 34                  |                  |
| 12 36                  |                  |
| 14 40                  |                  |
| 16 42                  |                  |
| 18 44                  |                  |
| 20 46                  |                  |
| 22 48                  |                  |
| 24                     |                  |



# Mechanical Repair Couplings

## Coupling Lengths and Weights (Single Row Coupling Screws)

| Pipe Diameter<br>(inches) | Length |     | Weight |        |
|---------------------------|--------|-----|--------|--------|
|                           | Inches | mm  | Lbs.   | (kg)   |
| 3                         | 7      | 178 | 22     | 9.98   |
| 4                         | 9      | 228 | 37     | 16.78  |
| 6                         | 10     | 255 | 73     | 33.11  |
| 8                         | 10     | 255 | 101    | 45.81  |
| 10                        | 11     | 279 | 134    | 60.78  |
| 12                        | 11     | 279 | 159    | 72.12  |
| 14                        | 14     | 355 | 246    | 111.58 |
| 16                        | 14     | 355 | 276    | 125.19 |
| 18                        | 16     | 406 | 352    | 159.66 |
| 20                        | 16     | 406 | 544    | 246.75 |
| 22                        | 16     | 406 | 594    | 269.43 |
| 24                        | 16     | 406 | 659    | 298.92 |
| 26                        | 16     | 406 | 693    | 314.34 |
| 28                        | 16     | 406 | 823    | 373.31 |
| 30                        | 16     | 406 | 857    | 388.73 |
| 32                        | 16     | 406 | 953    | 432.27 |
| 34                        | 16     | 406 | 998    | 452.69 |
| 36                        | 16     | 406 | 1054   | 478.09 |
| 40                        | 16     | 406 | 1153   | 522.99 |
| 42                        | 16     | 406 | 1245   | 564.72 |
| 44                        | 16     | 406 | 1288   | 584.23 |
| 46                        | 16     | 406 | 1344   | 609.63 |
| 48                        | 16     | 406 | 1372   | 622.33 |

## Maximum Working Pressure (psi) -20°F to 100°F

| Pipe Diameter<br>(Inches) | Single Row<br>Unanchored | Double Row |          |
|---------------------------|--------------------------|------------|----------|
|                           |                          | Unanchored | Anchored |
| 3                         | 1250                     | 1563       | 2000     |
| 4                         | 1120                     | 1400       | 2000     |
| 6                         | 690                      | 863        | 2000     |
| 8                         | 510                      | 638        | 2000     |
| 10                        | 395                      | 494        | 1500     |
| 12                        | 325                      | 406        | 1200     |
| 14                        | 310                      | 388        | 1200     |
| 16                        | 235                      | 294        | 1200     |
| 18                        | 230                      | 288        | 1200     |
| 20                        | 200                      | 250        | 1200     |
| 22                        | 200                      | 250        | 1200     |
| 24                        | 210                      | 263        | 1200     |
| 26                        | 180                      | 225        | 1000     |
| 28                        | 180                      | 225        | 1000     |
| 30                        | 130                      | 163        | 1000     |
| 32                        | 155                      | 194        | 1000     |
| 34                        | 145                      | 181        | 1000     |
| 36                        | 125                      | 156        | 1000     |
| 40                        | 115                      | 144        | 800      |
| 42                        | 105                      | 131        | 800      |
| 44                        | 100                      | 125        | 645      |
| 46                        | 100                      | 125        | 645      |
| 48                        | 95                       | 119        | 615      |

**Note:** For applications at temperatures outside these ranges, consult the factory for seal and pressure rating.



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