Flexible Shaft Couplings

R & D Marine has developed a wide range of competitively priced Flexible Couplings to fit all major installations.

The R & D Flexible Couplings reduce engine noise, vibration transmission and are designed to accept propeller thrust, a separate thrust bearing and bulk head are not required.

The couplings are made from a polyester elastomer which is not affected by salt water, diesel and lubrication fluids.

If electrical continuity is required an earthing connector can be fitted in the centre of most Flexible Couplings.

Installation is quick and easy as the R & D Coupling requires no machining and comes supplied with bolts to connect between the two existing shaft flanges.

Checking alignment on installation and during service checks is quick and easy using the red cone headed bolt.

Products are available ex-stock and worldwide through our distribution network.
The R & D 910 Series couplings consist of a contoured flexible disc moulded in tough yet resilient new type Polyester Elastomer. The contoured disc gives clearances for bolt heads, and is flexible to take up any temporary misalignment of the engine and shaft, due to flexing of the boat structure or the engine moving on its rubber vibration isolation mountings. Forward thrust is taken in compression on the disc between the two half couplings and reverse thrust is taken again in compression on the disc between both the fail safe straps. In the unlikely event of a disc failure, the steel straps make the coupling fail safe and ensure drive is maintained in both forward and reverse.

Couplings as standard are non-conducting but we can supply a silver impregnated rubber element to fit in the centre of the coupling between the two fail safe straps to give continuity if required.

### Flexible Coupling Information

<table>
<thead>
<tr>
<th>Gearbox Flange Dimensions</th>
<th>Flexible Coupling Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>B/W, PRM, ZF-Hath, Technodrive</td>
<td>910-001</td>
</tr>
<tr>
<td>Diameter (mm)</td>
<td>184.2</td>
</tr>
<tr>
<td>No of Bolts</td>
<td>4</td>
</tr>
<tr>
<td>Nom Dia Of Holes (mm)</td>
<td>82.5</td>
</tr>
<tr>
<td>Bolt Pitch Circle (mm)</td>
<td>150</td>
</tr>
<tr>
<td>Diameter (mm)</td>
<td>82.5</td>
</tr>
<tr>
<td>Length (mm)</td>
<td>125</td>
</tr>
<tr>
<td>Bolt Circle Diameter (mm)</td>
<td>82.5</td>
</tr>
<tr>
<td>Capacity /100 rpm (kW)</td>
<td>400</td>
</tr>
</tbody>
</table>

**R & D Marine Flexible Shaft Couplings**

To calculate Power of coupling required:

**Horsepower of engine X Reduction Ratio x 100 = HP/100rpm**

**Engine Speed**

**Coupling Required 910-009 Borg Warner 2500**

<table>
<thead>
<tr>
<th>HP x 0.7457 = KW</th>
<th>KW x 1.341 = HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 2 x 10 = 12 HP/100 rpm</td>
<td>12 HP/100 rpm</td>
</tr>
</tbody>
</table>

O These couplings are fitted with a shouldered bush to locate in the gearbox flange
X These flexible couplings have been approved by LLOYDS REGISTER OF SHIPPING

**How to Select (details required)**

1. **Engine horse power and Engine Speed**
2. **Gearbox type and reduction ratio**

(Pitch circle diameter is the distance between the centre hole at 12 O’clock position to the centre of the hole at 6 o’clock)

### Example

1. **Ford 150 HP at 2500 RPM**
2. **Borg Warner Velvet Drive 72C 2:1 Reduction**
3. **5” Flange, 2500 dia Register, 4,520 PCD, 4 off holes 0.437 diameter**

To calculate Power of coupling required:

**Horsepower of engine X Reduction Ratio x 100 = HP/100rpm**

**Engine Speed**

**Coupling Required 910-009 Borg Warner 2500**
**Fle xib le Coupling Inf ormation**

**For the IRM 220 Gearbox,** we can supply an adapter plate 202-384.

- 910-029
- 910-044(PR)
- 910-057

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**Example**

1. Engine horse power and Engine Speed is taken again in compression on the disc between the two fail safe straps. In the unlikely event of a disc failure, the steel straps make the coupling fail safe and

4 off holes 0.437 diameter

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**Technodrive**

<table>
<thead>
<tr>
<th>4&quot; Flange</th>
<th>910-001</th>
<th>910-004</th>
<th>910-014</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMC30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TMC40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TMC50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TMC60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM39A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM170</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM345</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM45A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM380A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM130B</td>
<td>910-006</td>
<td>910-026</td>
<td>910-033</td>
</tr>
<tr>
<td>TM200B up to 1.28: 1</td>
<td></td>
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</tr>
<tr>
<td>TM265A</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>TM1200A</td>
<td>910-018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5&quot; Flange</td>
<td>910-029</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5000</td>
<td>910-029</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&quot; Flange</td>
<td>910-003, 910-025, 910-032</td>
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</tr>
<tr>
<td>700</td>
<td>910-029</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Temp**

2 Bolt | 910-060 |

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**Twin Disc**

SC= Shallow Case, DC= Deep Case

**4" Flange**

- 910-001
- 910-004
- 910-014

- MG 340
- MG 360
- MG5010C
- MG5012C
- MG5015A
- MG5030C
- MG5055A
- MG5010DC
- MG5050
- MG5050-V
- MG5050-A
- MG5061C
- MG5061-A
- MG5061V
- MG5062V
- MG5061
- MG5061-A
- MG5071
- MG5071-A
- MG5072-SC
- MG5073-SC

**5" Flange**

- 910-014, 910-015, 910-016

**Paragon**

4" Flange | 910-005 |

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**Self Change Gears**

8 3/4" Flange | 910-015 |

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**Taipeoungyang**

178 mm Flange | 910-038 |

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**Couplings 910-030, 910-035, 910-041 and 910-045 will require suitable adaptors for the gearbox flange.**
INSTALLATION PROCEDURE FOR R & D MARINE COUPLINGS

1. Roughly align engine and stern gear without flexible coupling i.e. only two rigid half couplings pushed together.
2. Bolt “R & D Marine” coupling between the two rigid couplings. Tightening details as below.
3. Check alignment of engine by placing feeler gauges between the RED CONE HEADED BOLT and the rigid half coupling. Repeat for the SAME bolt at 90° intervals by rotating the shaft.
4. If the gap is the same in all four positions, the engine is accurately aligned. Recommended minimum to maximum gap difference: 0.25 mm / 0.010 inch.
5. Run installation to bring engine compartment to working temperature.

Recommended tightening torque:

- M8 - 27 Nm / 20 lbsft
- 3/8 UNF - 40 Nm / 30 lbsft
- M10 - 54 Nm / 40 lbsft
- 7/16 UNF - 81 Nm / 60 lbsft
- M12 - 108 Nm / 80 lbsft
- 1/2 UNF - 100 Nm / 75 lbsft
- 5/8 UNF - 210 Nm / 155 lbsft
- M18 - 338 Nm / 250 lbsft
- 3/4 UNF - 366 Nm / 270 lbsft

EARTHING CONNECTORS

‘R & D Marine’ Earthing Connector consists of a silver impregnated rubber strip, which when fitted through the axis of the coupling between the two fail safe straps gives electrical continuity. R & D have sizes to fit most 910 series couplings.

INSTALLATION PROCEDURE FOR R&D EARTHING CONNECTORS

1. While carrying out the following procedure, ensure that the connector is not contaminated by grease or dirt.
2. Before fitting the coupling into the drive train, remove 2 off bolts holding one of the fail safe straps.
3. Remove the fail safe strap to uncover the hole in the centre of the coupling.
4. Roll up the earthing connector (lengthways) as tight as possible.
5. Push into the hole previously uncovered by removing the strap as far as possible.
6. Replace the fail safe strap ensuring that the connector is not damaged, replace 2 off bolts.
7. Fit the coupling as per the installation instructions.
8. Check electrical continuity on installation and thereafter at three to six month intervals.

R & D Marine Earthing Connector Application Guide

<table>
<thead>
<tr>
<th>Part No</th>
<th>Size (mm)</th>
<th>To Suit Coupling</th>
</tr>
</thead>
<tbody>
<tr>
<td>103-036</td>
<td>9 x 57</td>
<td>910-021</td>
</tr>
<tr>
<td>103-037</td>
<td>11 x 57</td>
<td>910-001, 002, 007, 013, 014, 019, 020, 028, 043</td>
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<tr>
<td>103-038</td>
<td>15 x 57</td>
<td>910-004, 005</td>
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<tr>
<td>103-039</td>
<td>17 x 57</td>
<td>910-006, 009, 012, 036, 037, 044, 052</td>
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<td>103-040</td>
<td>19 x 57</td>
<td>910-017, 018, 025, 026</td>
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<tr>
<td>103-041</td>
<td>23 x 57</td>
<td>910-029, 038, 039, 040, 057</td>
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<tr>
<td>103-042</td>
<td>25 x 57</td>
<td>910-032, 033</td>
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<tr>
<td>103-043</td>
<td>15 x 75</td>
<td>910-015, 016, 022, 024, 046, 048, 053</td>
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<tr>
<td>103-044</td>
<td>17 x 75</td>
<td>910-030, 041, 042, 047, 051</td>
</tr>
<tr>
<td>103-047</td>
<td>9 x 30</td>
<td>910-035, 045, 049, 050</td>
</tr>
<tr>
<td>103-053</td>
<td>19 x 75</td>
<td>910-062</td>
</tr>
</tbody>
</table>

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