JENS S.


# PRC Coupling

**The PRC elastic coupling offers versatile, general purpose, and cost effective product for easy installation and maintenance**

# Protorque PRC Elastic Couplings are engineered for easy installation, minimal maintenance, and cost-effective performance across a wide range of industrial applications.

A durable elastomeric element forms the core of the PRC coupling, enabling reliable torque transmission while absorbing shock and vibration. Designed for general-purpose use, this coupling ensures smooth operation by accommodating angular and parallel misalignments. With its robust construction and minimal maintenance needs, the PRC coupling is an ideal long-term solution for a broad spectrum of industrial machinery.

**The user-friendly design, versatile application range, and excellent vibration dampening ensure the PRC Coupling delivers reliable, low-maintenance performance, while helping reduce operational costs.**

## PRC COUPLING

Reliable and efficient general-purpose coupling with simple installation and minimal upkeep

| Coupling Size | Torque Range [Nm] | Bore Range [mm] |
|---|---|---|
| PRC 70 H | 31 | 9 - 25 |
| PRC 90 H | 80 | 12 - 28 |
| PRC 110 H | 160 | 14 - 38 |
| PRC 130 H | 315 | 19 - 52 |
| PRC 150 H | 600 | 19 - 55 |
| PRC 180 H | 950 | 24 - 65 |
| PRC 230 H | 2000 | 25 - 80 |
| PRC 280 H | 3150 | 32 - 90 |

## BENEFITS AT A GLANCE

### MISALIGNMENT TOLERANCE

Accommodates angular and parallel misalignments for smooth, trouble-free performance.

### SHOCK & VIBRATION ABSORPTION

The elastomeric insert cushions and protects equipment from shocks and vibrations.

### LOW MAINTENANCE

Engineered for durability with longlasting components and fewer service interventions.

### WIDE APPLICATION COMPATIBILITY

Adaptable for use across various industries and mechanical systems.

# Design Features


Phosphate coated for improved corrosion resistance.

Fail-safe design due to interlocking jaw design

Nitrile element for oil-resistant, flexible shock absorbtion

Finished bore and pilot bore variations available.

Ease of alignment and fitting due to fully machine outside surfaces to allow alignment with a simple straight edge

# Selection

| Selection | |
|---|---|
| **EXAMPLE**<br>A shaft coupling is required to transmit 70kW between a 1200 rev/min diesel engine and a hoist running over 16hrs/day. Engine shaft is 70mm and the hoist shaft is 75mm. | |
| **a) Service Factor**<br>Determine appropriate Service Factor from table below | **a) Service Factor**<br>The appropriate service factor is 2.5. |
| **b) Design Power**<br>Multiply running power of driven machinery by the service factor. This gives the design powerwhich is used as a basis for coupling selection. | **b) Design Power**<br>Design power 70 x 2.5=175kW. |
| **c) Coupling Size**<br>Refer to Power Ratings table below and read across from the appropriate speed until a power equal to or greater than the design power is found. The size of coupling is given at the head of that column. | **c) Coupling Size**<br>Reading across from 1200 rev/min in the speed column of Power Ratings table below, 251kW is the first power to exceed the required 175kW (design power). The size of the coupling at the head of this column is 230. |
| **d) Bore Size**<br>From Dimensions table on page 117 check that the required bores can be accommodated. | **d) Bore Size**<br>The Dimensions table (page 117) shows that both shaft diameters are within the bore range available. |

| | |
|---|---|
| **Service torque** | TK = 9550x P/n (Nm |
| **Coupling torque** | TK N ≥Tk x K (Nm)<br><br>P = Power per kW<br>n = r/m |

# Service Factor & Power Rating

## Service Factor (K)

**SPECIAL CASES**
For applications where substantial shock, vibration and torque fluctuation occur, and for reciprocating machines e.g., internal combustion engines, piston type pumps and compressors, refer to your local Authorised Distributor, with full machine details for torsional analysis.

**UNIFORM**
Agitators, brewing machinery, centrifugal blowers, centrifugal compressors, conveyors, centrifugal fans and pumps, generators, sewage disposal equipment.

**MODERATE SHOCK**
Clay working machinery, crane hoists, laundry machinery, wood working machinery, machine tools, rotary mills, paper mill machinery, textile machinery, non-uniformly loaded centrifugal pumps.

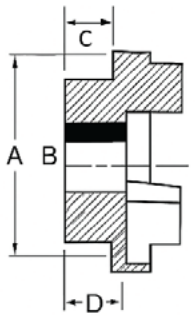
**HEAVY SHOCK**
Reciprocating conveyors, crushers, shakers, metal mills, rubber machinery (banbury mixers and mills), reciprocating compressors, welding sets.

| Type of driving unit | | | | | |
|---|---|---|---|---|---|
| Electric motors Steam Turbines | | | Internal combustion engines 4-6 cylinders Steam engines Water turbines | | |
| Hours per day dut | | | Hours per day duty | | |
| ≤8 | >8 ≤16 | >16 | ≤8 | >8≤16 | >16 |
| 1,0 | 1,2 | 1,3 | 1,3 | 1,4 | 4,0 |
| 1,6 | 1,8 | 2,0 | 2,0 | 2,3 | 2,5 |
| 2,5 | 2,8 | 3,2 | 3,2 | 3,6 | 1,6 |

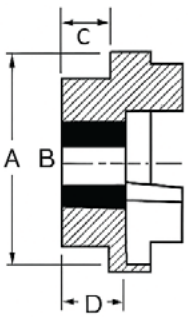
## Power ratings

| Speed | Coupling Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 70 | 90 | 110 | 130 | 150 | 180 | 230 | 280 |
| rev/min | kW | | | | | | | |
| 50 | 0,16 | 0,42 | 0,84 | 1,65 | 3,14 | 4,97 | 10,47 | 16,49 |
| 100 | 0,33 | 0,84 | 1,68 | 3,3 | 6,28 | 9,95 | 20,94 | 32,98 |
| 200 | 0,66 | 1,68 | 3,35 | 6,6 | 12,57 | 19,9 | 41,88 | 65,97 |
| 300 | 0,99 | 2,51 | 5,03 | 9,9 | 18,85 | 29,84 | 62,83 | 98,95 |
| 400 | 1,32 | 3,35 | 6,7 | 13,19 | 25,13 | 39,79 | 83,77 | 131,94 |
| 500 | 1,65 | 4,19 | 8,38 | 16,49 | 31,41 | 49,75 | 104,71 | 164,92 |
| 600 | 1,98 | 5,03 | 10,05 | 19,79 | 37,7 | 59,69 | 125,65 | 197,91 |
| 700 | 2,31 | 5,86 | 11,73 | 23,09 | 43,98 | 69,63 | 146,6 | 230,89 |
| 720 | 2,37 | 6,03 | 12,06 | 23,75 | 45,24 | 71,62 | 150,79 | 237,49 |
| 800 | 2,64 | 6,7 | 13,4 | 26,39 | 50,26 | 79,58 | 167,54 | 263,87 |
| 900 | 2,97 | 7,,54 | 15,08 | 29,69 | 56,54 | 89,53 | 188,48 | 296,86 |
| 960 | 3,17 | 8,04 | 16,08 | 31,66 | 60,3 | 95,5 | 201,05 | 316,65 |
| 1000 | 3,3 | 8,38 | 16,75 | 32,98 | 62,83 | 99,48 | 208,42 | 329,84 |
| 1200 | 3,96 | 10,05 | 20,1 | 39,58 | 75,39 | 119,37 | 251,31 | 395,81 |
| 1400 | 4,62 | 11,73 | 23,46 | 46,18 | 87,96 | 139,27 | 293,19 | 461,78 |
| 1440 | 4,75 | 12,06 | 24,13 | 47,5 | 90,47 | 143,25 | 301,57 | 474,97 |
| 1600 | 5,28 | 13,4 | 26,81 | 52,77 | 100,52 | 159,16 | 335,08 | 527,75 |
| 1800 | 5,94 | 15,08 | 30,16 | 59,37 | 113,09 | 179,06 | 376,96 | 593,72 |
| 2000 | 6,6 | 16,75 | 33,51 | 65,97 | 125,65 | 198,95 | 418,85 | 659,69 |
| 2200 | 7,26 | 18,43 | 36,86 | 72,57 | 138,22 | 218,85 | 460,73 | 725,65 |
| 2400 | 7,92 | 20,1 | 40,21 | 79,16 | 150,79 | 238,74 | 502,62 | |
| 2600 | 8,58 | 21,78 | 43,56 | 85,76 | 163,35 | 258,64 | 544,5 | |
| 2880 | 9,24 | 23,46 | 46,91 | 92,36 | 175,92 | 278,53 | | |
| 2880 | 9,5 | 24,13 | 48,25 | 94,99 | 180,94 | 286,49 | | |
| 3000 | 9,9 | 25,13 | 50,26 | 98,95 | 188,48 | 298,43 | | |
| 3600 | 11,87 | 30,16 | 60,31 | 118,74 | 226,18 | | | |
| Nominal Torque (Nm) | 31,5 | 80 | 160 | 315 | 600 | 950 | 2000 | 3150 |
| Max Torque (Nm) | 72 | 180 | 360 | 720 | 1500 | 2350 | 5000 | 7200 |

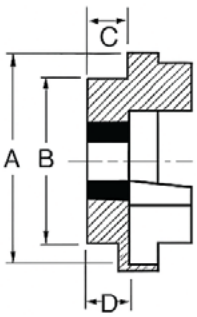
# Dimensions



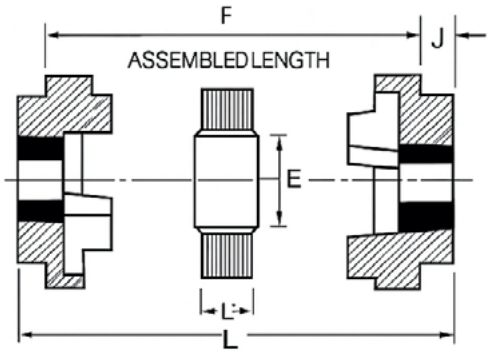
B Flange



F Flange



H Flange




| Size | Bushing No. | A | B | E | F | G | Max bore [mm] | Max bore [Inch] | C | D | J |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **70 F** | 1008 | 69 | 60 | 31 | 25 | 18 | 25 | 1 | 20 | 23,75 | 29 |
| **70 H** | 1008 | 69 | 60 | 31 | 25 | 18 | 25 | 1 | 20 | 23,75 | 29 |
| **90 F** | 1108 | 85 | 70 | 32 | 30,5 | 22,5 | 28 | 1 1/8 | 19,5 | 23,25 | 29 |
| **90 H** | 1108 | 85 | 70 | 32 | 30,5 | 22,5 | 28 | 1 1/8 | 19,5 | 23,25 | 29 |
| **110 F** | 1210 | 112 | 100 | 45 | 45 | 29 | 42 | 1 5/8 | 18,5 | 26,75 | 38 |
| **110 H** | 1210 | 112 | 100 | 45 | 45 | 29 | 42 | 1 5/8 | 18,5 | 26,75 | 38 |
| **130 F** | 1610 | 130 | 105 | 50 | 53 | 36 | 42 | 1 5/8 | 18 | 26,5 | 38 |
| **130 H** | 1610 | 130 | 105 | 50 | 53 | 36 | 42 | 1 5/8 | 18 | 26,5 | 38 |
| **150 F** | 2012 | 150 | 115 | 62 | 60 | 40 | 50 | 2 | 23,5 | 33,5 | 42 |
| **150 H** | 2012 | 150 | 115 | 62 | 60 | 40 | 50 | 2 | 23,5 | 33,5 | 42 |
| **180 F** | 2517 | 180 | 125 | 77 | 73 | 49 | 60 | 2 1/2 | 34,5 | 46,5 | 48 |
| **180 H** | 2517 | 180 | 125 | 77 | 73 | 49 | 60 | 2 1/2 | 34,5 | 46,5 | 48 |
| **230 F** | 3020 | 225 | 155 | 99 | 85,5 | 59,5 | 75 | 3 | 39,5 | 52,5 | 55 |
| **230 H** | 3020 | 225 | 155 | 99 | 85,5 | 59,5 | 75 | 3 | 39,5 | 52,5 | 55 |
| **280 F** | 3535 | 275 | 185 | 119 | 105,5 | 74,5 | 90 | 3 1/2 | 74 | 90 | 67 |
| **280 H** | 3535 | 275 | 185 | 119 | 105,5 | 74,5 | 90 | 3 1/2 | 74 | 90 | 67 |

| Size | Assembled Length [L*] FF, FH, HH | Weight [kg] | Inertia [Mr² kgm] | Dynamic stiffness [Nm/°] | Max misalignment | | | Nominal torque [Nm] |
|---|---|---|---|---|---|---|---|---|
| | | | | | [Parallel] | [Axial] | [Angular] | |
| **70 F** | 65 | 1 | 0,001 | / | 0,3 | 0,2 | 1 | 31 |
| **70 H** | 65 | 1 | 0,001 | / | 0,3 | 0,2 | 1 | 31 |
| **90 F** | 69,5 | 1,17 | 0,001 | / | 0,3 | 0,5 | 1 | 80 |
| **90 H** | 69,5 | 1,17 | 0,001 | / | 0,3 | 0,5 | 1 | 80 |
| **110 F** | 82 | 5 | 0,004 | 65 | 0,3 | 0,6 | 1 | 160 |
| **110 H** | 82 | 5 | 0,004 | 65 | 0,3 | 0,6 | 1 | 160 |
| **130 F** | 89 | 5,46 | 0,008 | 130 | 0,4 | 0,8 | 1 | 315 |
| **130 H** | 89 | 5,46 | 0,008 | 130 | 0,4 | 0,8 | 1 | 315 |
| **150 F** | 107 | 7,11 | 0,018 | 175 | 0,4 | 0,9 | 1 | 600 |
| **150 H** | 107 | 7,11 | 0,018 | 175 | 0,4 | 0,9 | 1 | 600 |
| **180 F** | 142 | 16,6 | 0,043 | 229 | 0,4 | 1,1 | 1 | 950 |
| **180 H** | 142 | 16,6 | 0,043 | 229 | 0,4 | 1,1 | 1 | 950 |
| **230 F** | 164,5 | 26 | 0,121 | 587 | 0,5 | 1,3 | 1 | 2000 |
| **230 H** | 164,5 | 26 | 0,121 | 587 | 0,5 | 1,3 | 1 | 2000 |
| **280 F** | 207,5 | 55,3 | 0,447 | 1025 | 0,5 | 1,7 | 1 | 3150 |
| **280 H** | 207,5 | 55,3 | 0,447 | 1025 | 0,5 | 1,7 | 1 | 3150 |

**JENS S. ITEM NO. EXAMPLES**

**PRC150H**
PRC type hub for taper bush mounting (H outside), coupling size 150

**PRC150F**
PRC type hub for taper bush mounting (F inside), coupling size 150.

**PRC150NR**
PRC, coupling size 150 and element (NR rubber)