Heavy Duty Bearings
in TOUGHMET® Spinodal Bronze

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THE BIGGEST ADVANCE IN PLAIN BEARINGS IN MORE THAN 70 YEARS

Bowman International Ltd, of the UK, have developed the new BowMet® range of rolled bearings manufactured in the material ToughMet® from Materion, which has outstanding bearing properties.

The new range of bearings offers higher load capacity than any other proprietary plain bearing and its heat, speed and corrosion capabilities combine to offer greatly increased life in many applications. Savings in warranty claims, down time, product reliability and maintenance have resulted, and been documented, across a wide range of industries. From heavy duty plant to racing engines, from marine to aircraft applications, benefits are available across a broad range of industries.

The Bowman method of producing bearings using a rolling process gives virtually no wastage and is far more cost effective than machined alternatives using ToughMet®. There is no minimum quantity. Low tooling costs mean that one-offs to high volume are economical.

- Direct replacement for existing bushes
- High Load Capacity
- High PV value
- Extended life
- Corrosion resistant
- Suits harsh environments
- Runs in water incl. seawater
- Cost effective
- Low cost specials
- Metric and imperial
- Pockets, holes and lubrication grooves available

Fitting Instructions

*Assembly ring only required for bearing with OD > 55mm
### Technical Data

<table>
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<tr>
<th>Description</th>
<th>Metric Bearing Data</th>
<th>Imperial Bearing Data</th>
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<td>Material</td>
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<td>Composition</td>
<td>Cu 77% Ni 15%Sn 8%</td>
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<td>Static load</td>
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<td>38 W/mk</td>
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### Corrosion resistance

ToughMet® resists saltwater corrosion, hydrogen embrittlement, and chloride stress-corrosion cracking better than most copper-based alloys. In Sulphide environments like sour gas wells, ToughMet® resists stress-corrosion cracking very well, and has an extremely low corrosion rate compared to other copper-based alloys. In some sulphide environments, the corrosion rate is similar to stainless steels and nickel alloys.

Galvanically, ToughMet® is similar to other copper-nickel alloys and is lead free.

### Optional Lubrication Indentations/Holes Design

- **Diamond Indentations**
  - Inside Diameter < Ф 22
  - Inside Diameter ≥ Ф 22

- **Spherical Holes**
  - Inside Diameter ≤ Ф 25
  - Inside Diameter > Ф 25

ToughMet® is a registered trademark of Materion Corp. Bowmet® is a registered trademark of Bowman International Ltd.
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**Standard Lengths**

- ID < 80 : Length +/- 0.25
- ID ≥ 80 : Length +/- 0.50

**Metric Plain Bowmet Heavy Duty Bearings**

**Spinodal Bronze**
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Part numbers shown in table are plain bores
If diamond pocketed bores are required add D after part number
If thru holes are required add H after part number
Bowman International Limited reserve the right to change specification without prior notice E & OE

Other features are available on request: ID groove/lubrication configurations
Non standard dimensions
Clinch/jig/saw joints on split
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</table>

Part numbers shown in table are plain bores
If thru holes are required add H after part number

Other features are available on request: ID groove/lubrication configurations
Non standard dimensions
Clinch/jigsaw joints on split

Bowman International Limited reserve the right to change specification without prior notice E & OE
## Metric Heavy Duty Washer
### in TOUGHMET® Spinodal Bronze

<table>
<thead>
<tr>
<th>Inside Diameter</th>
<th>Outside Diameter</th>
<th>Dowel Hole Diameter</th>
<th>Dowel Hole PCD</th>
<th>Standard Thicknesses</th>
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<tr>
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<td>-</td>
<td>1.5</td>
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<td>BMT 1020015</td>
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<td>14</td>
<td>26</td>
<td>2.25</td>
<td>20</td>
<td>BMT 1224015</td>
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<td>2.25</td>
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<td>BMT 1426015</td>
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<td>BMT 1630015</td>
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<td>BMT 2238015</td>
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<td>BMT 2644015</td>
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<td>4.25</td>
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<td>BMT 2848015</td>
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Part numbers shown in table are plain faces. If diamond pocketed faces are required add D after part number. If thru holes are required add H after part number.

Special dimensions and groove/lubrication configurations are available on request.

### Metric Heavy Duty Plates
### in TOUGHMET® Spinodal Bronze

<table>
<thead>
<tr>
<th>Inside Diameter</th>
<th>Outside Diameter</th>
<th>Dowel Hole Diameter</th>
<th>Dowel Hole PCD</th>
<th>Standard Thicknesses +/- 0.01</th>
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<tbody>
<tr>
<td>1.00mm</td>
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<td>3.00mm</td>
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</table>

Bearing plates are cut to order. Plates can have diamond pockets added.

Bowman International Limited reserve the right to change specification without prior notice E & OE.
### Inch Plain Heavy Duty Bearings

#### Spinodal Bronze

<table>
<thead>
<tr>
<th>ID</th>
<th>ID when in Housing +/-</th>
<th>Shaft Diameter +/-</th>
<th>OD</th>
<th>Housing Diameter +/-</th>
<th>Standard Lengths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3/8 0.375</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7/16 0.437</td>
<td>+0.0019 -0.0008</td>
<td>15/32 0.468</td>
<td>+0.0035 -0.0035</td>
<td>BMPI 0606 BMPI 0608 BMPI 0612</td>
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<tr>
<td>1/2 0.5</td>
<td>+0.0010 -0.0020</td>
<td>17/32 0.531</td>
<td></td>
<td>BMPI 0708 BMPI 0712</td>
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<tr>
<td>9/16 0.562</td>
<td>+0.0019 -0.0008</td>
<td>19/32 0.593</td>
<td></td>
<td>BMPI 0806 BMPI 0808 BMPI 0810 BMPI 0814</td>
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<tr>
<td>5/8 0.625</td>
<td>+0.0020 -0.0008</td>
<td>21/32 0.656</td>
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<td>BMPI 0908 BMPI 0912</td>
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<td>3/4 0.75</td>
<td>+0.0025 -0.0007</td>
<td>7/8 0.875</td>
<td>+0.0005 -0.0003</td>
<td>BMPI 1208 BMPI 1212 BMPI 1216</td>
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<tr>
<td>7/8 0.875</td>
<td>+0.0026 -0.0028</td>
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<td>+0.0006 -0.0004</td>
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<tr>
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<td>1 1/8 1.125</td>
<td>+0.0012 -0.0024</td>
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<tr>
<td>1 1/4 1.25</td>
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<td>1 13/32 1.406</td>
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<td>BMPI 2012 BMPI 2016 BMPI 2020 BMPI 2028</td>
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<td>1 17/32 1.531</td>
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<td>BMPI 2216 BMPI 2228</td>
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<tr>
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<td>+0.0012 -0.0010</td>
<td>1 21/32 1.656</td>
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<td>BMPI 2416 BMPI 2420 BMPI 2424</td>
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<tr>
<td>1 3/4 1.78</td>
<td>+0.0035 -0.0011</td>
<td>1 25/32 1.781</td>
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<tr>
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<td>+0.0037 -0.0011</td>
<td>1 15/16 1.937</td>
<td>+0.0006 -0.0004</td>
<td>BMPI 2816 BMPI 2824 BMPI 2828</td>
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<tr>
<td>2 1/4 2.25</td>
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<td>2 3/16 2.187</td>
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<td>BMPI 4012 BMPI 4040 BMPI 4048 BMPI 4056</td>
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<td>2 15/16 2.937</td>
<td>-0.0005 -0.0017</td>
<td>BMPI 4432 BMPI 4440 BMPI 4448 BMPI 4456</td>
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<tr>
<td>3 1/2 3.350</td>
<td>+0.0006 -0.0002</td>
<td>3 3/16 3.187</td>
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<td>BMPI 4832 BMPI 4848 BMPI 4860</td>
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<td>-0.0003 -0.0017</td>
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<td>7 3/16 7.187</td>
<td>-0.0045 -0.0065</td>
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**Notes:**
- Part numbers shown in table are plain bores
- If diamond pocketed bores are required add D after part number
- If thru holes are required add H after part number
- Other features are available on request: ID groove/lubrication configurations
- Non standard dimensions
- Clinch/Jigsaw joints on split
### Inch Flanged Heavy Duty Bearings

**in Spinodal Bronze**

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<tr>
<th>ID</th>
<th>ID when in Housing +/−</th>
<th>Shaft Diameter +/−</th>
<th>OD</th>
<th>Housing Diameter +/−</th>
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<th>Flanged Radius Max</th>
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<td>15/32 0.4688</td>
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<td>19/32 0.5938</td>
<td>+0.0003</td>
<td>13/16 0.812</td>
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<td>+0.0030</td>
<td>+0.0002</td>
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<td>+0.0004</td>
<td>15/16 0.937</td>
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<td>0.75</td>
<td>7/8 0.8750</td>
<td>11/8 1.125</td>
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<td>BMFI 1208</td>
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<td>0.0000</td>
<td>+0.0005</td>
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<td>1 1.250</td>
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<td>BMFI 1612</td>
<td>BMFI 1616</td>
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<td>1.250</td>
<td>1 1.2500</td>
<td>1 1.375</td>
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<td>BMFI 2020</td>
<td>BMFI 2024</td>
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<td>1 1.750</td>
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<tr>
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**Standard Lengths**

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<tr>
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<tr>
<td>1 3/4</td>
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Part numbers shown in table are plain bores
If thru holes are required add H after part number

*Other features are available on request: ID groove/lubrication configurations
Non standard dimensions
Clinch/jigsaw joints on split*

*Bowman International Limited reserve the right to change specification without prior notice E & OE*
Inch Heavy Duty Washer in Toughmet Spinodal Bronze

<table>
<thead>
<tr>
<th>Inside Diameter</th>
<th>Outside Diameter</th>
<th>Dowel Hole Diameter</th>
<th>Dowel Hole PCD</th>
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</thead>
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<td>0.109</td>
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<td>1/2</td>
<td>0.8750</td>
<td>0.099</td>
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<td>1.0000</td>
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<td>1.1870</td>
<td>0.140</td>
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<tr>
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<td>1/2</td>
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Standard Thicknesses: ±0.0004

<table>
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<th>Thickness + 0.001 - 0.01</th>
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</thead>
<tbody>
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<td>1/16</td>
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<tr>
<td>3/32</td>
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</tbody>
</table>

BMTI 06
BMTI 07
BMTI 08
BMTI 09
BMTI 10
BMTI 11
BMTI 12
BMTI 14
BMTI 16
BMTI 18
BMTI 20
BMTI 22
BMTI 24
BMTI 26
BMTI 28
BMTI 30
BMTI 32

Part numbers shown in table are plain faces.
If diamond pocketed faces are required add D after part number.
If thru holes are required add H after part number.

Special dimensions and groove/lubrication configurations are available on request

Inch Heavy Duty Plates in Toughmet Spinodal Bronze

Bearing plates are cut to order. Plates can have diamond pockets added.

<table>
<thead>
<tr>
<th>Standard Thicknesses +/- 0.0004</th>
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</thead>
<tbody>
<tr>
<td>3/64&quot; 0.0469</td>
</tr>
<tr>
<td>1/16&quot; 0.0625</td>
</tr>
<tr>
<td>5/64&quot; 0.0781</td>
</tr>
<tr>
<td>3/32&quot; 0.0938</td>
</tr>
</tbody>
</table>

Bowman International Limited reserve the right to change specification without prior notice E & OE.
Other Products

- PTFE Lined Wrapped Bearings
- Sintered Bronze Lined Wrapped Bearings
- Acetal Lined Wrapped Bearings
- Plastic Bearings
- Ball Bearings
- White Metal Bearings
- CuSn8 Hard Bronze Bearings
- Full Machining Service
- Bronze Bearings Graphite Loaded
- Oilite® Sintered Shapes
- Oilite® Sintered Bearings

See also: Oilite® Sintered Bearings Catalogue and Bearings and Components Catalogue

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