


**The Timken Company**

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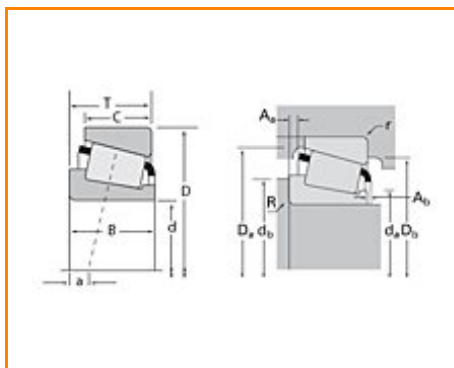
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## Timken Part Number 80176 - 80217, Tapered Roller Bearings - TS (Tapered Single) Imperial

This is the most basic and most widely used type of tapered roller bearing. It consists of two main separable parts: the cone (inner ring) assembly and the cup (outer ring). It is typically mounted in opposing pairs on a shaft.



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### Specifications

|                         |                       |
|-------------------------|-----------------------|
| <b>Series</b>           | 80000                 |
| <b>Cone Part Number</b> | 80176                 |
| <b>Cup Part Number</b>  | 80217                 |
| <b>Design Units</b>     | Imperial              |
| <b>Bearing Weight</b>   | 21.20 Kg<br>46.800 lb |
| <b>Cage Type</b>        | Stamped Steel         |

### Dimensions

|                 |                          |
|-----------------|--------------------------|
| <b>d - Bore</b> | 447.675 mm<br>17.6250 in |
|-----------------|--------------------------|

|                               |                          |
|-------------------------------|--------------------------|
| <b>D - Cup Outer Diameter</b> | 552.450 mm<br>21.7500 in |
| <b>B - Cone Width</b>         | 44.45 mm<br>1.75 in      |
| <b>C - Cup Width</b>          | 31.750 mm<br>1.2500 in   |
| <b>T - Bearing Width</b>      | 44.450 mm<br>1.7500 in   |

## Abutment and Fillet Dimensions

|  |                       |
|--|-----------------------|
| <b>R - Cone Backface "To Clear" Radius<sup>1</sup></b> | 3.300 mm<br>0.130 in  |
| <b>r - Cup Backface "To Clear" Radius<sup>2</sup></b>  | 3.30 mm<br>0.130 in   |
| <b>da - Cone Frontface Backing Diameter</b>            | 464.06 mm<br>20.31 in |
| <b>db - Cone Backface Backing Diameter</b>             | 467.11 mm<br>18.39 in |
| <b>Da - Cup Frontface Backing Diameter</b>             | 533.90 mm<br>21.02 in |
| <b>Db - Cup Backface Backing Diameter</b>              | 531.11 mm<br>20.91 in |
| <b>Ab - Cage-Cone Frontface Clearance</b>              | 6.1 mm<br>0.24 in     |
| <b>Aa - Cage-Cone Backface Clearance</b>               | 4.6 mm<br>0.18 in     |
| <b>a - Effective Center Location<sup>3</sup></b>       | 26.2 mm<br>1.03 in    |

## Basic Load Ratings

|   |                       |
|---|-----------------------|
| <b>C90 - Dynamic Radial Rating<br/>(90 million revolutions)<sup>4</sup></b> | 162000 N<br>36500 lbf |
|---|-----------------------|

|   |                        |
|---|------------------------|
| <b>C1 - Dynamic Radial Rating (1<br/>million revolutions)<sup>5</sup></b> | 626000 N<br>141000 lbf |
|---|------------------------|

|                                  |                         |
|----------------------------------|-------------------------|
| <b>C0 - Static Radial Rating</b> | 1550000 N<br>348000 lbf |
|----------------------------------|-------------------------|

|   |                      |
|---|----------------------|
| <b>C<sub>a90</sub> - Dynamic Thrust Rating<br/>(90 million revolutions)<sup>6</sup></b> | 88600 N<br>19900 lbf |
|---|----------------------|

## Factors

|                               |      |
|-------------------------------|------|
| <b>K - Factor<sup>7</sup></b> | 1.83 |
|-------------------------------|------|

|                                   |      |
|-----------------------------------|------|
| <b>e - ISO Factor<sup>8</sup></b> | 0.32 |
|-----------------------------------|------|

|                                   |      |
|-----------------------------------|------|
| <b>Y - ISO Factor<sup>9</sup></b> | 1.88 |
|-----------------------------------|------|

|   |      |
|---|------|
| <b>G1 - Heat Generation Factor<br/>(Roller-Raceway)</b> | 3440 |
|---|------|

|   |     |
|---|-----|
| <b>G2 - Heat Generation Factor<br/>(Rib-Roller End)</b> | 868 |
|---|-----|

|                             |       |
|-----------------------------|-------|
| <b>Cg - Geometry Factor</b> | 0.188 |
|-----------------------------|-------|

<sup>1</sup> These maximum fillet radii will be cleared by the bearing corners.

<sup>2</sup> These maximum fillet radii will be cleared by the bearing corners.

<sup>3</sup> Negative value indicates effective center inside cone backface.

<sup>4</sup> Based on  $90 \times 10^6$  revolutions  $L_{10}$  life, for The Timken Company life calculation method.  $C_{90}$  and  $C_{a90}$  are radial and thrust values.

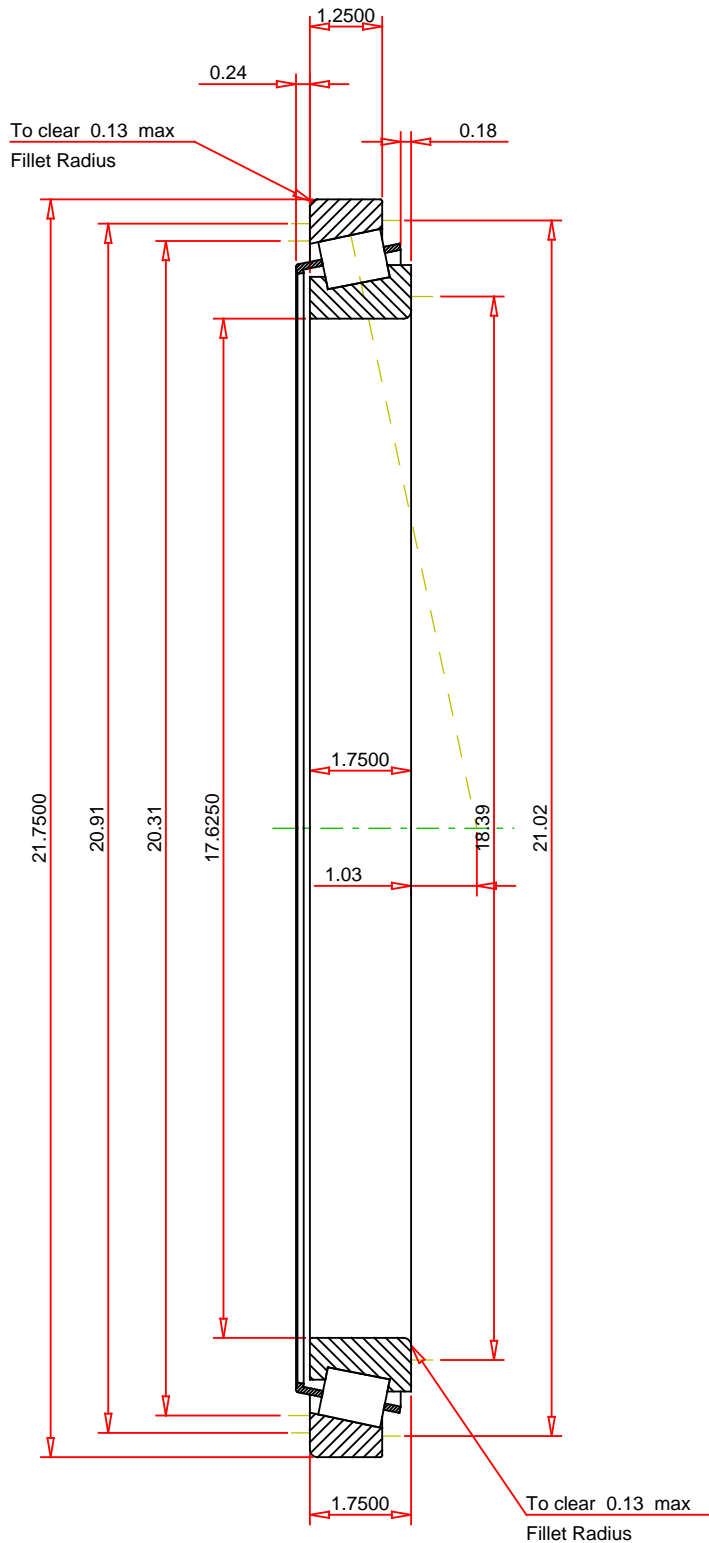
<sup>5</sup> Based on  $1 \times 10^6$  revolutions  $L_{10}$  life, for the ISO life calculation method.

<sup>6</sup> Based on  $90 \times 10^6$  revolutions  $L_{10}$  life, for The Timken Company life calculation method.  $C_{90}$  and  $C_{a90}$  are radial and thrust values for a single-row,  $C_{90(2)}$  is the two-row radial value.

<sup>7</sup> These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

<sup>8</sup> These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

<sup>9</sup> These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.



IMPERIAL UNITS

|   |  |  |  |   |  |
|---|--|--|--|---|--|
| <div>ISO Factor - e0.32</div> <div>ISO Factor - Y1.88</div> <div>Bearing Weight46.8 lb</div> <div>Number of Rollers Per Row58</div> <div>Effective Center Location1.03 inch</div> |  | <div>TIMKEN®</div> <div>THE TIMKEN COMPANY</div> <div>NORTH CANTON, OHIO USA</div> |  | <div>80176 - 80217</div> <div>TS BEARING ASSEMBLY</div>   |  |
|   |  |  |  | <div>K Factor1.83</div> <div>Dynamic Radial Rating - C90162000 lbf</div> <div>Dynamic Thrust Rating - Ca9088600 lbf</div> <div>Static Radial Rating - C01550000 lbf</div> <div>Dynamic Radial Rating - C1626000 lbf</div> |  |

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