


**The Timken Company**

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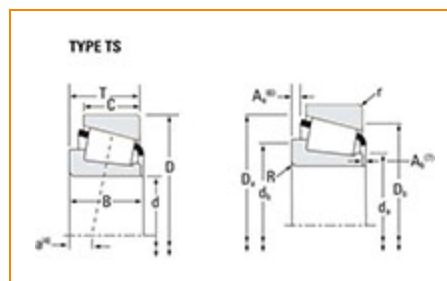
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## Part Number 665 - 653, Tapered Roller Bearings - TS (Tapered Single) Imperial

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>	655
<b>Cone Part Number</b>	665
<b>Cup Part Number</b>	653
<b>Design Unit</b>	Inch
<b>Bearing Weight</b>	5.7 lb 2.6 Kg
<b>Cage Material</b>	Stamped Steel

### Dimensions


**- Bore**

 3.3750 in  
85.725 mm

<b>D - Cup Outer Diameter</b>	5.750 in 146.05 mm
<b>B - Cone Width</b>	1.6250 in 41.275 mm
<b>C - Cup Width</b>	1.2500 in 31.750 mm
<b>T - Bearing Width</b>	1.6250 in 41.275 mm

## Abutment and Fillet Dimensions

<b>R - Cone Backface "To Clear" Radius<sup>1</sup></b>	0.140 in 3.6 mm
<b>r - Cup Backface "To Clear" Radius<sup>2</sup></b>	0.130 in 3.30 mm
<b>da - Cone Frontface Backing Diameter</b>	3.74 in 95 mm
<b>db - Cone Backface Backing Diameter</b>	4.02 in 102 mm
<b>Da - Cup Frontface Backing Diameter</b>	5.51 in 139.95 mm
<b>Db - Cup Backface Backing Diameter</b>	5.16 in 131.06 mm
<b>Ab - Cage-Cone Frontface Clearance</b>	0.1 in 2.5 mm
<b>Aa - Cage-Cone Backface Clearance</b>	0.17 in 4.3 mm
<b>a - Effective Center Location<sup>3</sup></b>	-0.31 in -7.9 mm

## Basic Load Ratings

<b>C90 - Dynamic Radial Rating (90 million revolutions)<sup>4</sup></b>	14400 lbf 64000 N
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<b>C1 - Dynamic Radial Rating (1 million revolutions)<sup>5</sup></b>	55500 lbf 247000 N
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<b>C0 - Static Radial Rating</b>	75300 lbf 335000 N
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<b>C<sub>a90</sub> - Dynamic Thrust Rating (90 million revolutions)<sup>6</sup></b>	10100 lbf 44800 N
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## Factors

<b>K - Factor<sup>7</sup></b>	1.43
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<b>e - ISO Factor<sup>8</sup></b>	0.41
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<b>Y - ISO Factor<sup>9</sup></b>	1.47
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<b>G1 - Heat Generation Factor (Roller-Raceway)</b>	136.6
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<b>G2 - Heat Generation Factor (Rib-Roller End)</b>	27.3
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<b>Cg - Geometry Factor<sup>10</sup></b>	0.0919
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<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.

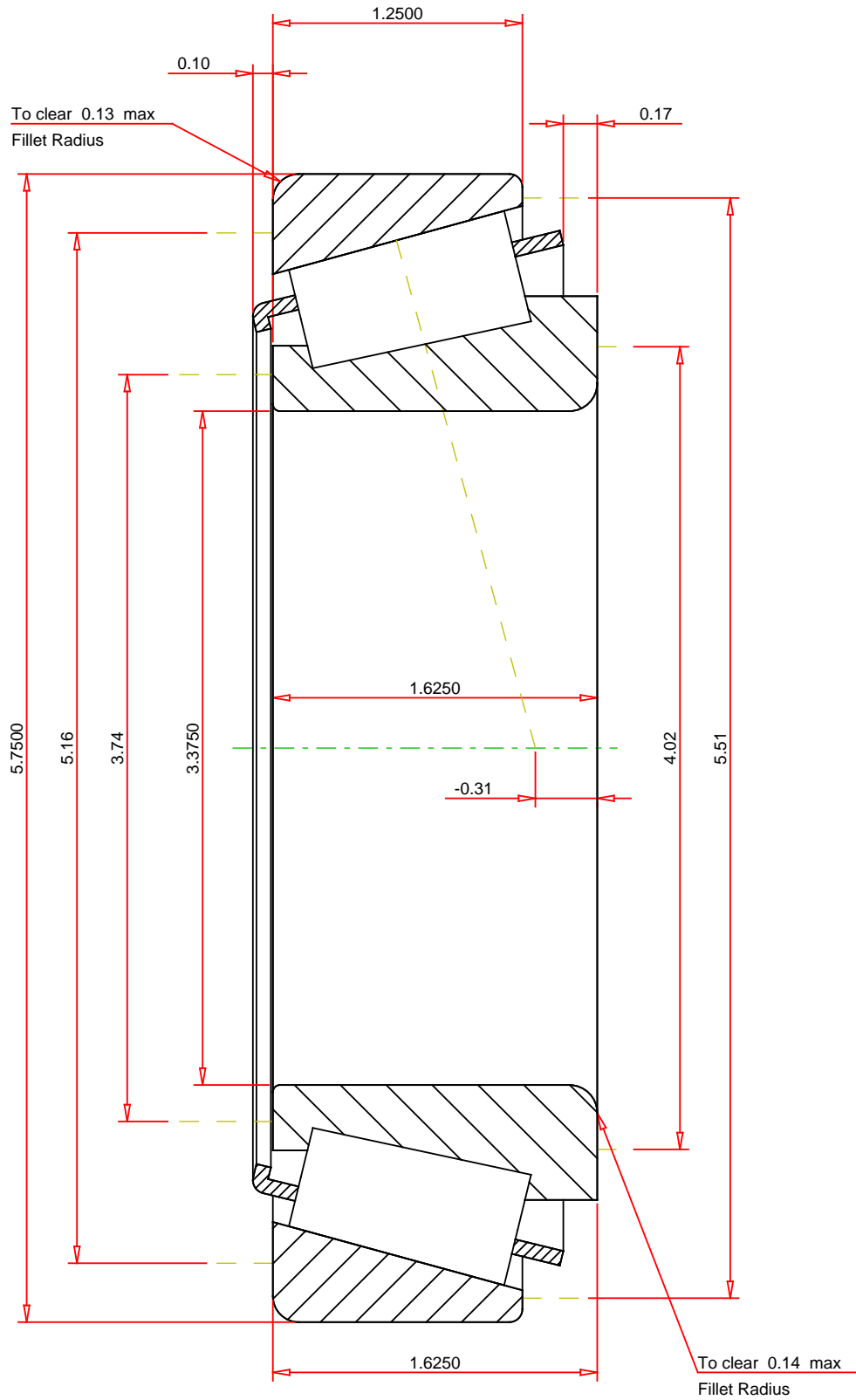
<sup>6</sup> Based on  $90 \times 10^6$  revolutions  $L_{10}$  life, for The Timken Company life calculation method.  $C_{90}$  and  $C_{a90}$  are radial and thrust values for a single-row,  $C_{90(2)}$  is the two-row radial value.

<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.

<sup>10</sup> Geometry constant for Lubrication Life Adjustment Factor  $a_3$ .



## IMPERIAL UNITS

ISO Factor - e 0.41  
 ISO Factor - Y 1.47  
 Bearing Weight 5.7 lbf  
 Number of Rollers Per Row 20  
 Effective Center Location -0.31 inch

**TIMKEN®**

**THE TIMKEN COMPANY**  
 NORTH CANTON, OHIO USA

**665 - 653**  
 Tapered Roller Bearings - TS (Tapered Single)  
 Imperial

K Factor 1.43  
 Dynamic Radial Rating - C90 14400 lbf  
 Dynamic Thrust Rating - Ca90 10100 lbf  
 Static Radial Rating - C0 75300 lbf  
 Dynamic Radial Rating - C1 55500 lbf

Every reasonable effort has been made to ensure the accuracy of the information contained in this writing, but no liability is accepted for errors, omissions or for any other reason.

**FOR DISCUSSION ONLY**