


**The Timken Company**

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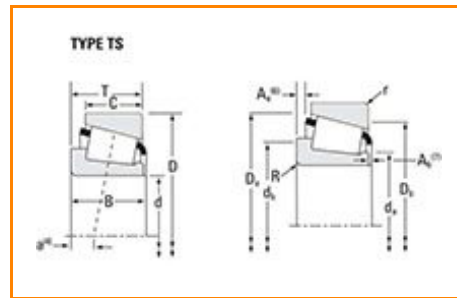
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## Timken Part Number 13686 - 13621, Tapered Roller Bearings - TS (Tapered Single) Imperial

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>	13600
<b>Cone Part Number</b>	13686
<b>Cup Part Number</b>	13621
<b>Design Units</b>	Imperial
<b>Bearing Weight</b>	0.80 lb
<b>Cage Type</b>	Stamped Steel

## Dimensions

<b>d - Bore</b>	1.5 in
<b>D - Cup Outer Diameter</b>	2.7170 in
<b>B - Cone Width</b>	1.0313 in
<b>C - Cup Width</b>	0.5938 in
<b>T - Bearing Width</b>	1.0313 in

## Abutment and Fillet Dimensions

<b>R - Cone Backface "To Clear" Radius<sup>1</sup></b>	0.06 in
<b>r - Cup Backface "To Clear" Radius<sup>2</sup></b>	0.090 in
<b>da - Cone Frontface Backing Diameter</b>	1.69 in
<b>db - Cone Backface Backing Diameter</b>	1.79 in
<b>Da - Cup Frontface Backing Diameter</b>	2.60 in
<b>Db - Cup Backface Backing Diameter</b>	2.40 in
<b>Ab - Cage-Cone Frontface Clearance</b>	0.05 in
<b>Aa - Cage-Cone Backface Clearance</b>	0.3 in
<b>a - Effective Center Location<sup>3</sup></b>	-0.4 in

## Basic Load Ratings

<b>C90 - Dynamic Radial Rating (90 million revolutions)<sup>4</sup></b>	17400 N 3920 lbf
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<b>C1 - Dynamic Radial Rating (1 million revolutions)<sup>5</sup></b>	67200 N 15100 lbf
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<b>C0 - Static Radial Rating</b>	67900 N 15300 lbf
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<b>C<sub>a90</sub> - Dynamic Thrust Rating (90 million revolutions)<sup>6</sup></b>	12000 N 2700 lbf
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## Factors

<b>K - Factor<sup>7</sup></b>	1.45
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<b>e - ISO Factor<sup>8</sup></b>	0.40
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<b>Y - ISO Factor<sup>9</sup></b>	1.49
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<b>G1 - Heat Generation Factor (Roller-Raceway)</b>	20.7
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<b>G2 - Heat Generation Factor (Rib-Roller End)</b>	12.2
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<b>C<sub>g</sub> - Geometry Factor</b>	0.0713
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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.

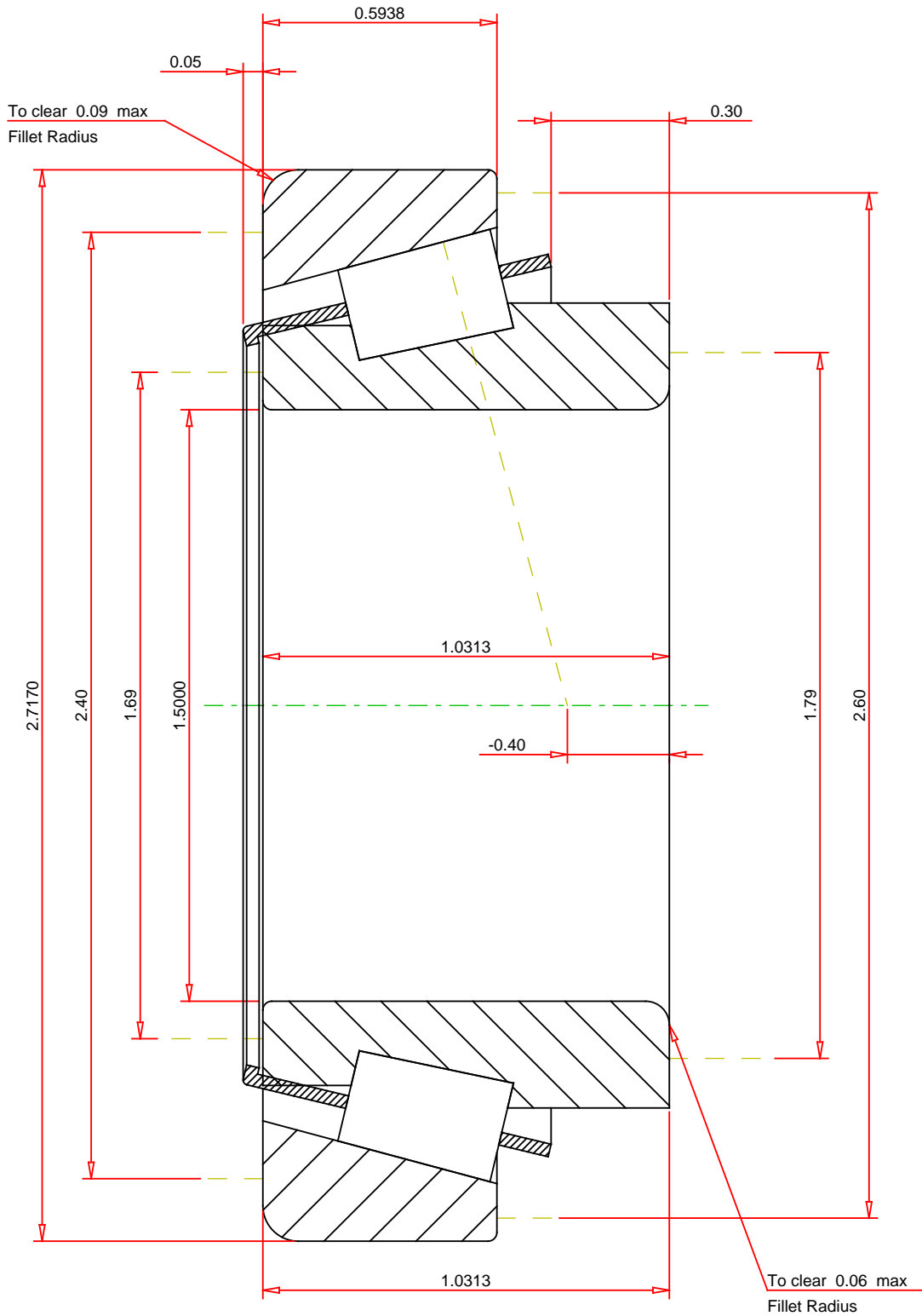
<sup>5</sup> Based on  $1 \times 10^6$  revolutions  $L_{10}$  life, for the ISO life calculation method.

<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.



## IMPERIAL UNITS

ISO Factor - e 0.4  
 ISO Factor - Y 1.49  
 Bearing Weight 0.8 lb  
 Number of Rollers Per Row 20  
 Effective Center Location -0.4 inch

**TIMKEN®**

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

**13686 - 13621**  
**TS BEARING ASSEMBLY**

K Factor 1.45  
 Dynamic Radial Rating - C90 17400 lbf  
 Dynamic Thrust Rating - Ca90 12000 lbf  
 Static Radial Rating - C0 67900 lbf  
 Dynamic Radial Rating - C1 67200 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**