



**The Timken Company**

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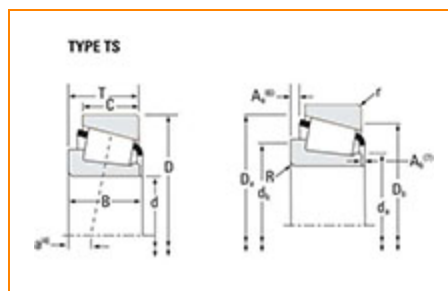
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## Part Number 07097 - 07204, Tapered Roller Bearings - TS (Tapered Single) Imperial

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

Series	07000
Cone Part Number	07097
Cup Part Number	07204
Design Units	Imperial
Bearing Weight	0.10 Kg 0.3 lb
Cage Type	Stamped Steel

### Dimensions

d - Bore	25.001 mm 0.9843 in
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<b>D - Cup Outer Diameter</b>	51.994 mm 2.0470 in
<b>B - Cone Width</b>	14.260 mm 0.5614 in
<b>C - Cup Width</b>	12.700 mm 0.5000 in
<b>T - Bearing Width</b>	15.011 mm 0.5910 in

## Abutment and Fillet Dimensions

<b>R - Cone Backface "To Clear" Radius<sup>1</sup></b>	1.520 mm 0.06 in
<b>r - Cup Backface "To Clear" Radius<sup>2</sup></b>	1.27 mm 0.050 in
<b>da - Cone Frontface Backing Diameter</b>	28.96 mm 1.14 in
<b>db - Cone Backface Backing Diameter</b>	30.99 mm 1.22 in
<b>Da - Cup Frontface Backing Diameter</b>	48.51 mm 1.91 in
<b>Db - Cup Backface Backing Diameter</b>	44.96 mm 1.77 in
<b>Ab - Cage-Cone Frontface Clearance</b>	2 mm 0.08 in
<b>Aa - Cage-Cone Backface Clearance</b>	0 mm 0 in
<b>a - Effective Center Location<sup>3</sup></b>	-2.8 mm -0.11 in

## Basic Load Ratings

<b>C90 - Dynamic Radial Rating (90 million revolutions)<sup>4</sup></b>	1700 lbf 7550 N
<b>C1 - Dynamic Radial Rating (1 million revolutions)<sup>5</sup></b>	6540 lbf 29100 N
<b>C0 - Static Radial Rating</b>	6650 lbf 29600 N
<b>C<sub>a90</sub> - Dynamic Thrust Rating (90 million revolutions)<sup>6</sup></b>	1170 lbf 5190 N

## Factors

<b>K - Factor<sup>7</sup></b>	1.45
<b>e - ISO Factor<sup>8</sup></b>	0.4
<b>Y - ISO Factor<sup>9</sup></b>	1.49
<b>G1 - Heat Generation Factor (Roller-Raceway)</b>	7.6
<b>G2 - Heat Generation Factor (Rib-Roller End)</b>	7.07
<b>Cg - Geometry Factor<sup>10</sup></b>	0.0509

<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.

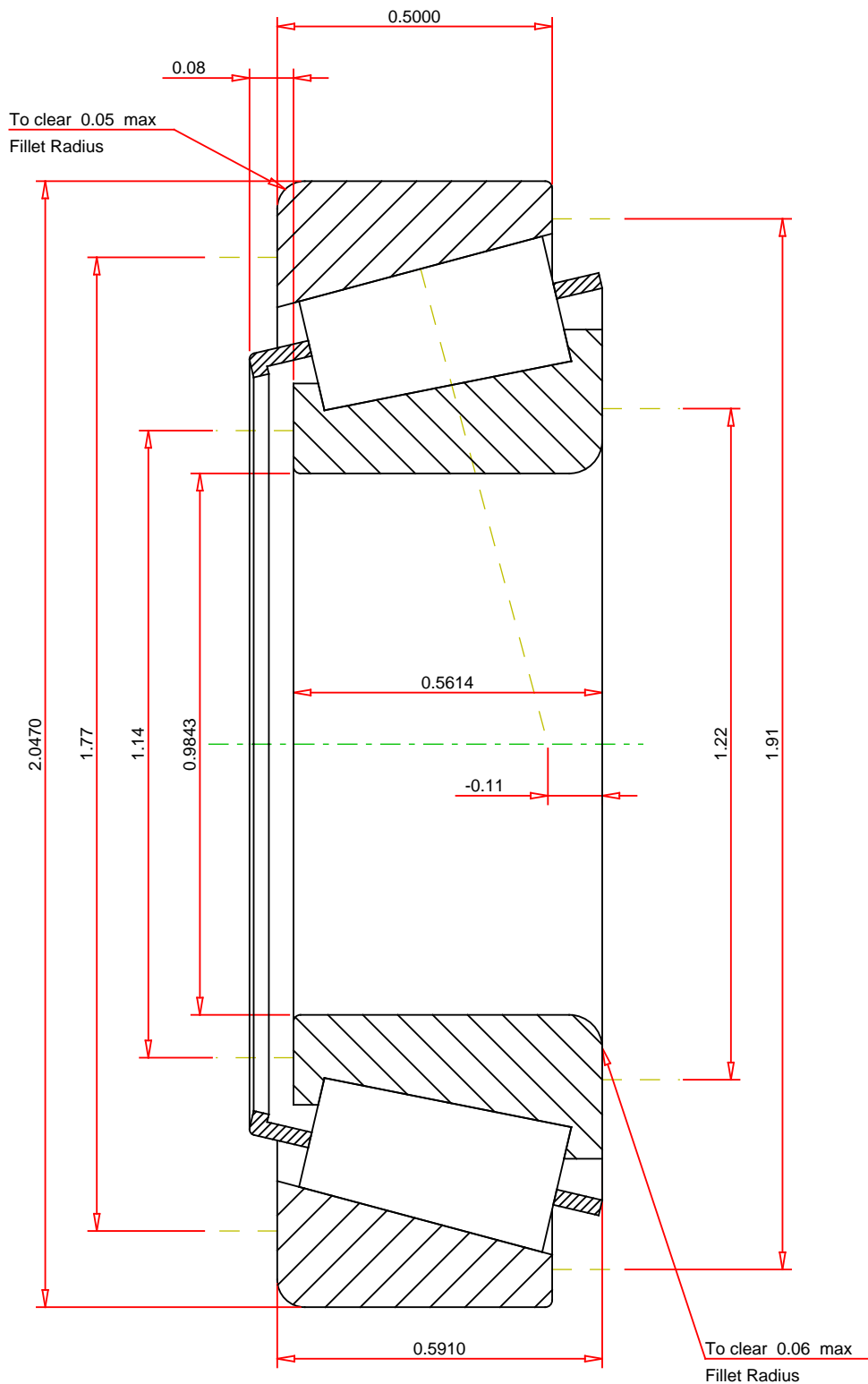
<sup>6</sup> Based on  $90 \times 10^6$  revolutions  $L_{10}$  life, for The Timken Company life calculation method.  $C_{90}$  and  $C_{a90}$  are radial and thrust values for a single-row,  $C_{90(2)}$  is the two-row radial value.

<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	0.4
ISO Factor - Y	1.49
Bearing Weight	0.3 lbf
Number of Rollers Per Row	16
Effective Center Location	-0.11 inch



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

<b>07097 - 07204</b> TS BEARING ASSEMBLY		
K Factor	1.45	
Dynamic Radial Rating - C90	1700	lbf
Dynamic Thrust Rating - Ca90	1170	lbf
Static Radial Rating - C0	6650	lbf
Dynamic Radial Rating - C1	6540	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