


**The Timken Company**

4500 Mt Pleasant St. NW

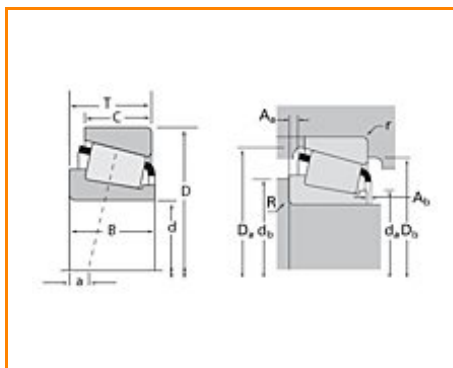
N. Canton, OH 44720

**Phone:** (234) 262-3000

**E-Mail:** [CustomerCAD@timken.com](mailto:CustomerCAD@timken.com) • **Web site:** [www.timken.com](http://www.timken.com)

## Timken Part Number 749 - 742, 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.



[Specifications](#) | [Dimensions](#) | [Abutment and Fillet Dimensions](#) | [Basic Load Ratings](#) | [Factors](#)

### Specifications

<b>Series</b>	745
<b>Cone Part Number</b>	749
<b>Cup Part Number</b>	742
<b>Design Units</b>	Imperial
<b>Bearing Weight</b>	3.200 Kg 7.20 lb
<b>Cage Type</b>	Stamped Steel

### Dimensions

<b>d - Bore</b>	85.027 mm 3.3475 in
-----------------	------------------------

<b>D - Cup Outer Diameter</b>	150.089 mm 5.9090 in
<b>B - Cone Width</b>	46.673 mm 1.8375 in
<b>C - Cup Width</b>	36.513 mm 1.4375 in
<b>T - Bearing Width</b>	44.450 mm 1.7500 in

## Abutment and Fillet Dimensions

<b>R - Cone Backface "To Clear" Radius<sup>1</sup></b>	3.560 mm 0.14 in
<b>r - Cup Backface "To Clear" Radius<sup>2</sup></b>	3.30 mm 0.130 in
<b>da - Cone Frontface Backing Diameter</b>	95.00 mm 4.46 in
<b>db - Cone Backface Backing Diameter</b>	101.09 mm 3.98 in
<b>Da - Cup Frontface Backing Diameter</b>	142.00 mm 5.63 in
<b>Db - Cup Backface Backing Diameter</b>	134.11 mm 5.28 in
<b>Ab - Cage-Cone Frontface Clearance</b>	2 mm 0.08 in
<b>Aa - Cage-Cone Backface Clearance</b>	1.3 mm 0.05 in
<b>a - Effective Center Location<sup>3</sup></b>	-11.9 mm -0.47 in

## Basic Load Ratings

<b>C90 - Dynamic Radial Rating (90 million revolutions)<sup>4</sup></b>	97600 N 21900 lbf
---	----------------------

<b>C1 - Dynamic Radial Rating (1 million revolutions)<sup>5</sup></b>	377000 N 84700 lbf
---	-----------------------

<b>C0 - Static Radial Rating</b>	417000 N 93800 lbf
----------------------------------	-----------------------

<b>C<sub>a90</sub> - Dynamic Thrust Rating (90 million revolutions)<sup>6</sup></b>	54400 N 12200 lbf
---	----------------------

## Factors

<b>K - Factor<sup>7</sup></b>	1.8
-------------------------------	-----

<b>e - ISO Factor<sup>8</sup></b>	0.33
-----------------------------------	------

<b>Y - ISO Factor<sup>9</sup></b>	1.84
-----------------------------------	------

<b>G1 - Heat Generation Factor (Roller-Raceway)</b>	160
---	-----

<b>G2 - Heat Generation Factor (Rib-Roller End)</b>	26.3
---	------

<b>Cg - Geometry Factor</b>	0.0898
-----------------------------	--------

<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.

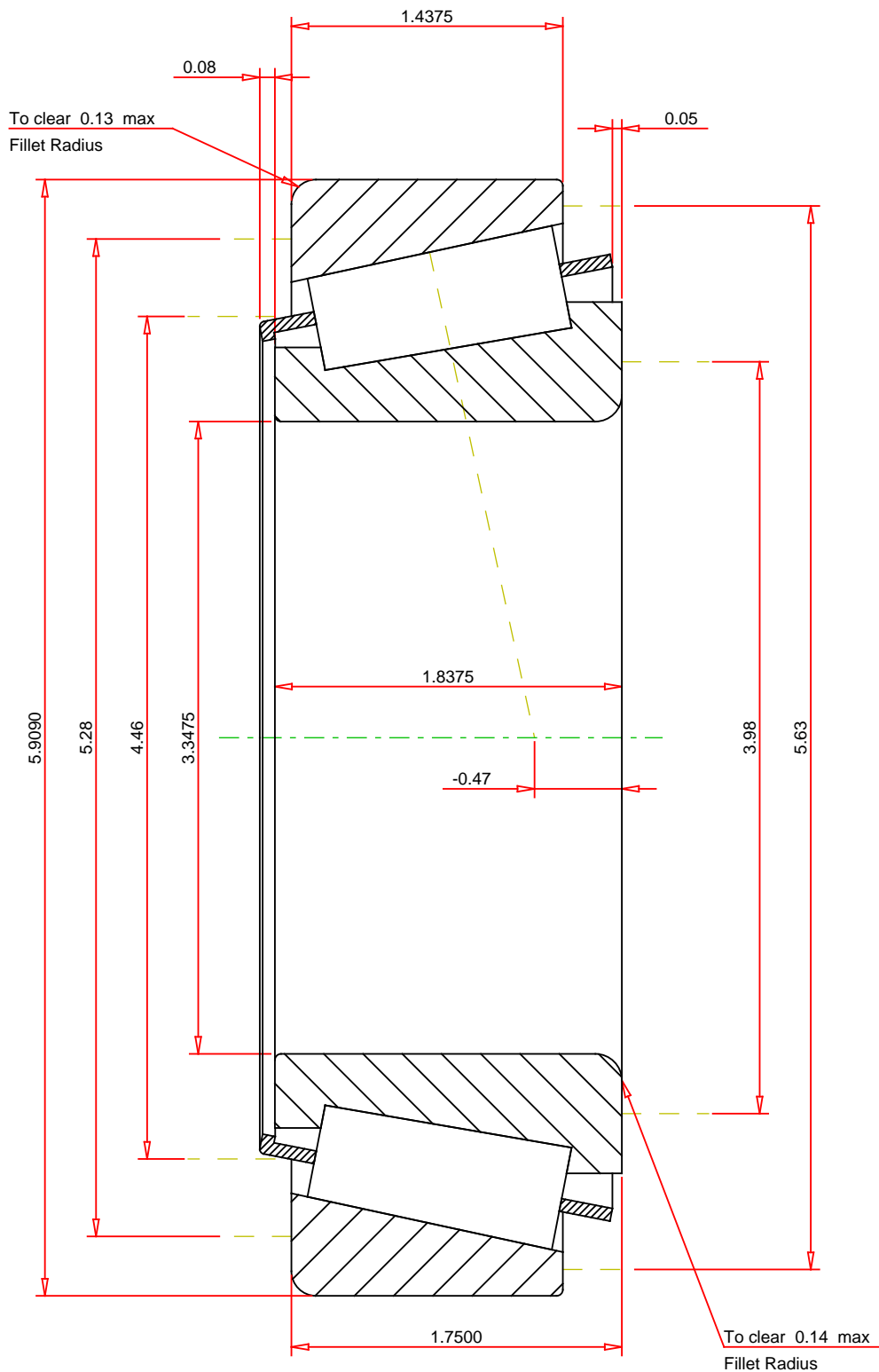
<sup>5</sup> Based on  $1 \times 10^6$  revolutions  $L_{10}$  life, for the ISO life calculation method.

<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 0.33  
 ISO Factor - Y 1.84  
 Bearing Weight 7.2 lb  
 Number of Rollers Per Row 18  
 Effective Center Location -0.47 inch

**TIMKEN®**

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

**749 - 742**  
**TS BEARING ASSEMBLY**

K Factor 1.8  
 Dynamic Radial Rating - C90 97600 lbf  
 Dynamic Thrust Rating - Ca90 54400 lbf  
 Static Radial Rating - C0 417000 lbf  
 Dynamic Radial Rating - C1 377000 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**