



**The Timken Company**

4500 Mt Pleasant St. NW

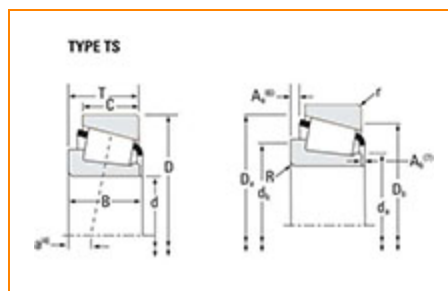
N. Canton, OH 44720

Phone: (234) 262-3000

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

## Part Number M12648 - M12610, 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

Series	M12600
Cone Part Number	M12648
Cup Part Number	M12610
Design Units	Imperial
Bearing Weight	0.20 Kg 0.4 lb
Cage Type	Stamped Steel

### Dimensions

d - Bore	22.225 mm 0.8750 in
----------	------------------------

<b>D - Cup Outer Diameter</b>	50.005 mm 1.9687 in
<b>B - Cone Width</b>	18.288 mm 0.7200 in
<b>C - Cup Width</b>	13.970 mm 0.5500 in
<b>T - Bearing Width</b>	17.526 mm 0.6900 in

## Abutment and Fillet Dimensions

<b>R - Cone Backface "To Clear" Radius<sup>1</sup></b>	1.270 mm 0.050 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>	26.42 mm 1.04 in
<b>db - Cone Backface Backing Diameter</b>	28.45 mm 1.12 in
<b>Da - Cup Frontface Backing Diameter</b>	46.48 mm 1.83 in
<b>Db - Cup Backface Backing Diameter</b>	43.94 mm 1.73 in
<b>Ab - Cage-Cone Frontface Clearance</b>	1.8 mm 0.07 in
<b>Aa - Cage-Cone Backface Clearance</b>	-0.3 mm -0.01 in
<b>a - Effective Center Location<sup>3</sup></b>	-6.4 mm -0.25 in

## Basic Load Ratings

<b>C90 - Dynamic Radial Rating (90 million revolutions)<sup>4</sup></b>	3040 lbf 13500 N
<b>C1 - Dynamic Radial Rating (1 million revolutions)<sup>5</sup></b>	11700 lbf 52200 N
<b>C0 - Static Radial Rating</b>	9780 lbf 43500 N
<b>C<sub>a90</sub> - Dynamic Thrust Rating (90 million revolutions)<sup>6</sup></b>	1450 lbf 6440 N

## Factors

<b>K - Factor<sup>7</sup></b>	2.1
<b>e - ISO Factor<sup>8</sup></b>	0.28
<b>Y - ISO Factor<sup>9</sup></b>	2.16
<b>G1 - Heat Generation Factor (Roller-Raceway)</b>	9.1
<b>G2 - Heat Generation Factor (Rib-Roller End)</b>	5.63
<b>Cg - Geometry Factor<sup>10</sup></b>	0.0479

<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.

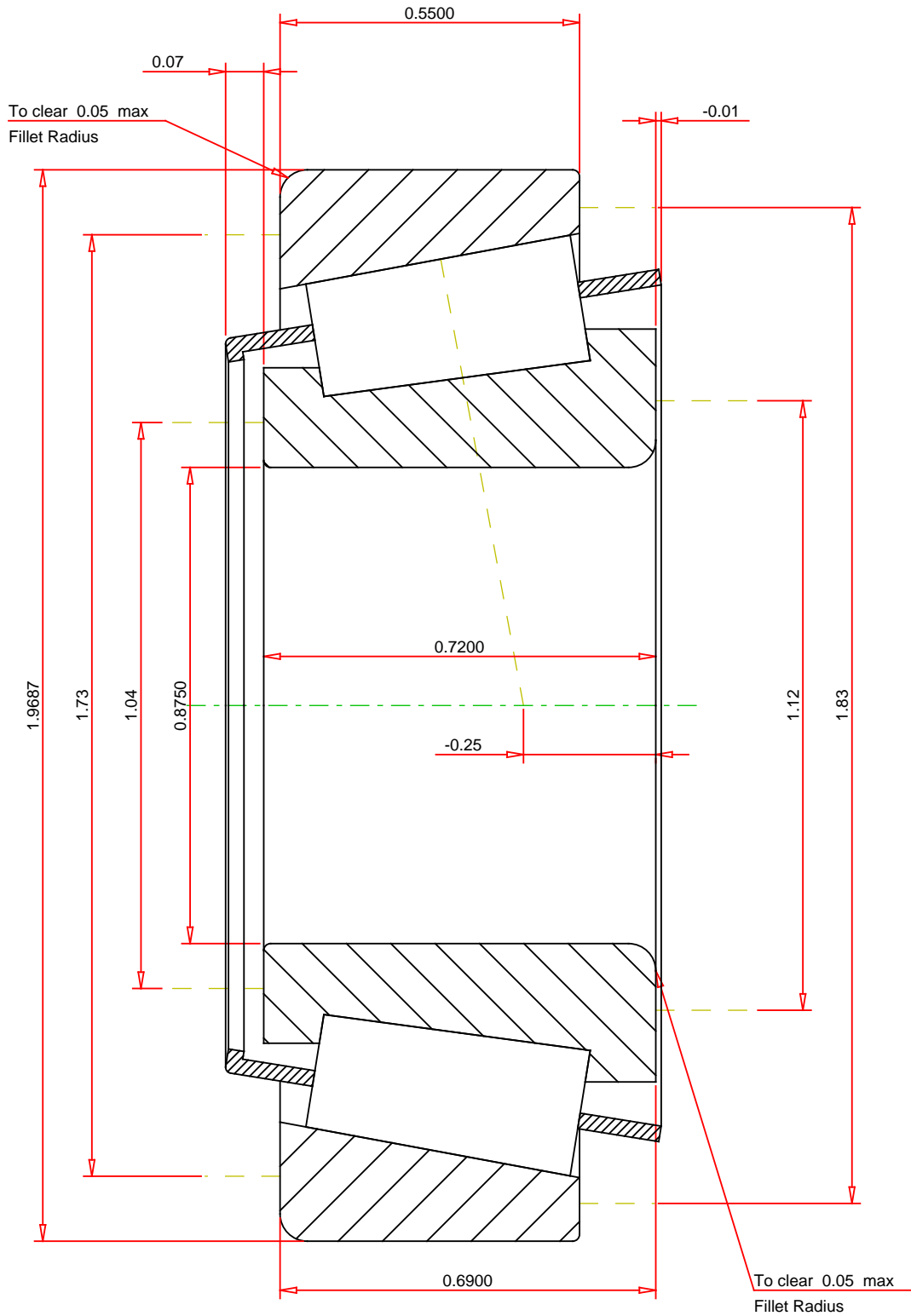
<sup>6</sup> Based on  $90 \times 10^6$  revolutions  $L_{10}$  life, for The Timken Company life calculation method.  $C_{90}$  and  $C_{a90}$  are radial and thrust values for a single-row,  $C_{90(2)}$  is the two-row radial value.

<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 0.28  
 ISO Factor - Y 2.16  
 Bearing Weight 0.4 lb  
 Number of Rollers Per Row 14  
 Effective Center Location -0.25 inch

**TIMKEN®**

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

**M12648 - M12610**  
**TS BEARING ASSEMBLY**

K Factor 2.1  
 Dynamic Radial Rating - C90 3040 lbf  
 Dynamic Thrust Rating - Ca90 1450 lbf  
 Static Radial Rating - C0 9780 lbf  
 Dynamic Radial Rating - C1 11700 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**