



**The Timken Company**

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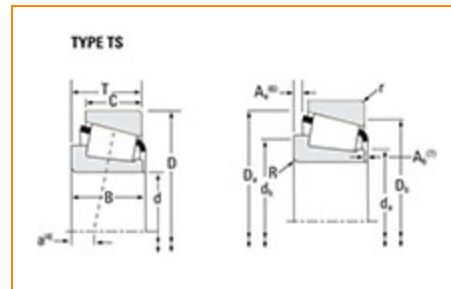
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## Part Number M86649 - M86610, Tapered Roller Bearings - TS (Tapered Single) Imperial

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	M86600
Cone Part Number	M86649
Cup Part Number	M86610
Design Units	Imperial
Bearing Weight	0.30 Kg 0.7 lb
Cage Type	Stamped Steel

### Dimensions

d - Bore	30.163 mm 1.1875 in
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<b>D - Cup Outer Diameter</b>	64.292 mm 2.5312 in
<b>B - Cone Width</b>	21.433 mm 0.8438 in
<b>C - Cup Width</b>	16.670 mm 0.6563 in
<b>T - Bearing Width</b>	21.433 mm 0.8438 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>	1.52 mm 0.06 in
<b>da - Cone Frontface Backing Diameter</b>	38.10 mm 1.5 in
<b>db - Cone Backface Backing Diameter</b>	43.94 mm 1.73 in
<b>Da - Cup Frontface Backing Diameter</b>	60.96 mm 2.40 in
<b>Db - Cup Backface Backing Diameter</b>	54.10 mm 2.13 in
<b>Ab - Cage-Cone Frontface Clearance</b>	1.8 mm 0.07 in
<b>Aa - Cage-Cone Backface Clearance</b>	0.8 mm 0.03 in
<b>a - Effective Center Location<sup>3</sup></b>	-3.3 mm -0.13 in

## Basic Load Ratings

<b>C90 - Dynamic Radial Rating (90 million revolutions)<sup>4</sup></b>	3510 lbf 15600 N
<b>C1 - Dynamic Radial Rating (1 million revolutions)<sup>5</sup></b>	13500 lbf 60200 N
<b>C0 - Static Radial Rating</b>	16100 lbf 71700 N
<b>C<sub>a90</sub> - Dynamic Thrust Rating (90 million revolutions)<sup>6</sup></b>	3280 lbf 14600 N

## Factors

<b>K - Factor<sup>7</sup></b>	1.07
<b>e - ISO Factor<sup>8</sup></b>	0.55
<b>Y - ISO Factor<sup>9</sup></b>	1.1
<b>G1 - Heat Generation Factor (Roller-Raceway)</b>	16.8
<b>G2 - Heat Generation Factor (Rib-Roller End)</b>	9.36
<b>C<sub>g</sub> - Geometry Factor<sup>10</sup></b>	0.0736

<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.

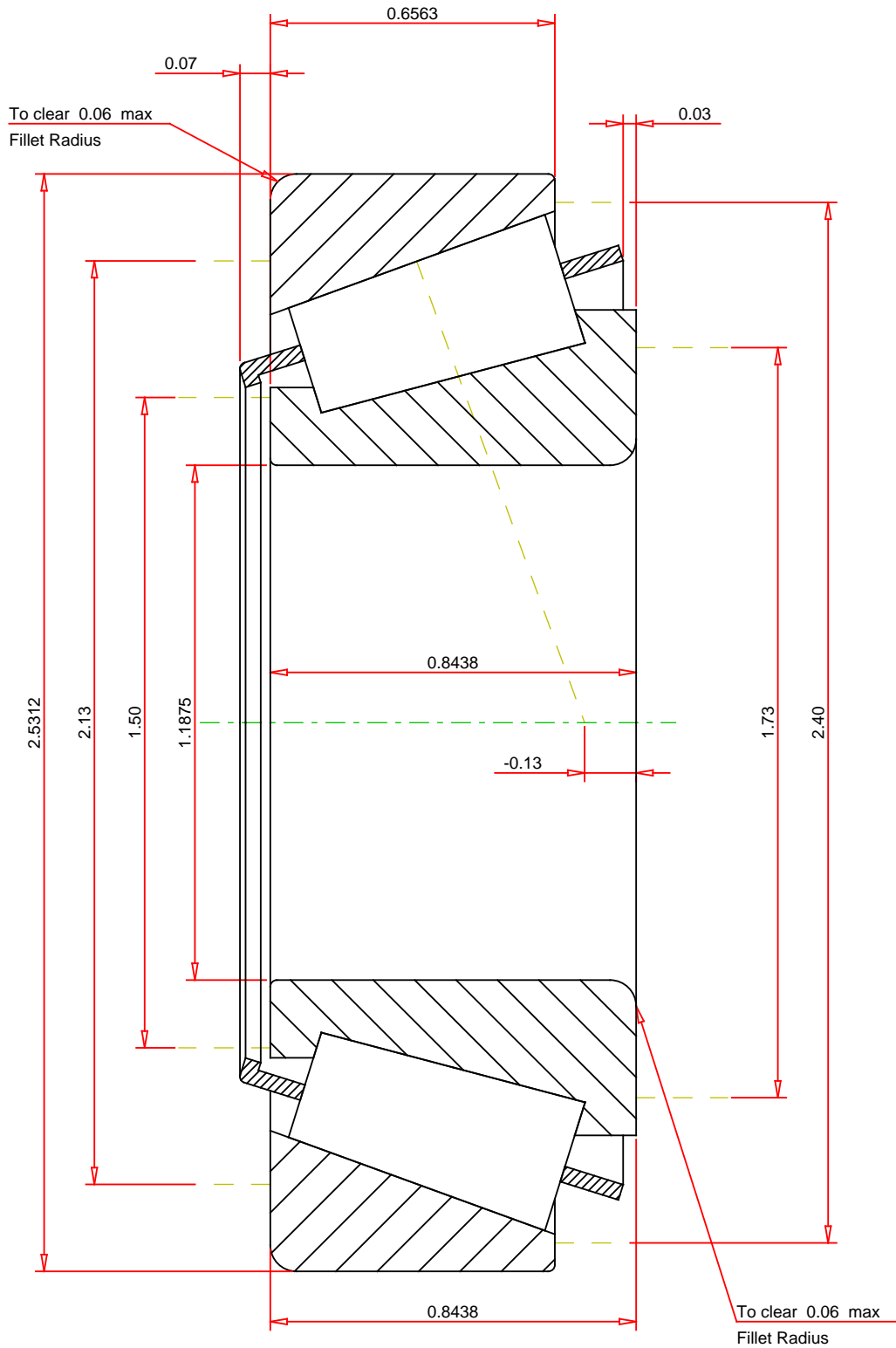
<sup>6</sup> Based on  $90 \times 10^6$  revolutions  $L_{10}$  life, for The Timken Company life calculation method.  $C_{90}$  and  $C_{a90}$  are radial and thrust values for a single-row,  $C_{90(2)}$  is the two-row radial value.

<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 a3l.



IMPERIAL UNITS

ISO Factor - e	0.55
ISO Factor - Y	1.1
Bearing Weight	0.7 lb
Number of Rollers Per Row	18
Effective Center Location	-0.13 inch

**TIMKEN**®

**M86649 - M86610**  
TS BEARING ASSEMBLY

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

K Factor	1.07
Dynamic Radial Rating - C90	3510 lbf
Dynamic Thrust Rating - Ca90	3280 lbf
Static Radial Rating - C0	16100 lbf
Dynamic Radial Rating - C1	13500 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**