

# TIMKEN

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## Timken Part Number 23100 - 23256, 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>	23000
<b>Cone Part Number</b>	23100
<b>Cup Part Number</b>	23256
<b>Design Units</b>	Imperial
<b>Bearing Weight</b>	0.400 Kg 0.80 lb
<b>Cage Type</b>	Stamped Steel

### Dimensions

<b>d - Bore</b>	25.400 mm 1.0000 in
<b>D - Cup Outer Diameter</b>	65.088 mm 2.5625 in

<b>B - Cone Width</b>	21.463 mm 0.8450 in
<b>C - Cup Width</b>	15.875 mm 0.6250 in
<b>T - Bearing Width</b>	22.225 mm 0.8750 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>	34.54 mm 1.36 in
<b>db - Cone Backface Backing Diameter</b>	39.12 mm 1.54 in
<b>Da - Cup Frontface Backing Diameter</b>	63.00 mm 2.52 in
<b>Db - Cup Backface Backing Diameter</b>	53.09 mm 2.09 in
<b>Ab - Cage-Cone Frontface Clearance</b>	2.5 mm 0.1 in
<b>Aa - Cage-Cone Backface Clearance</b>	3 mm 0.12 in
<b>a - Effective Center Location<sup>3</sup></b>	-2.30 mm -0.09 in

#### Basic Load Ratings

<b>C90 - Dynamic Radial Rating (90 million revolutions)<sup>4</sup></b>	14200 N 3180 lbf
<b>C1 - Dynamic Radial Rating (1 million revolutions)<sup>5</sup></b>	54600 N 12300 lbf
<b>C0 - Static Radial Rating</b>	55800 N 12500 lbf
<b>C<sub>a90</sub> - Dynamic Thrust Rating (90 million revolutions)<sup>6</sup></b>	17700 N 3990 lbf

## Factors

<b>K - Factor<sup>7</sup></b>	0.8
<b>e - ISO Factor<sup>8</sup></b>	0.73
<b>Y - ISO Factor<sup>9</sup></b>	0.82
<b>G1 - Heat Generation Factor (Roller-Raceway)</b>	11.3
<b>G2 - Heat Generation Factor (Rib-Roller End)</b>	6.57
<b>Cg - Geometry Factor</b>	0.07

<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.

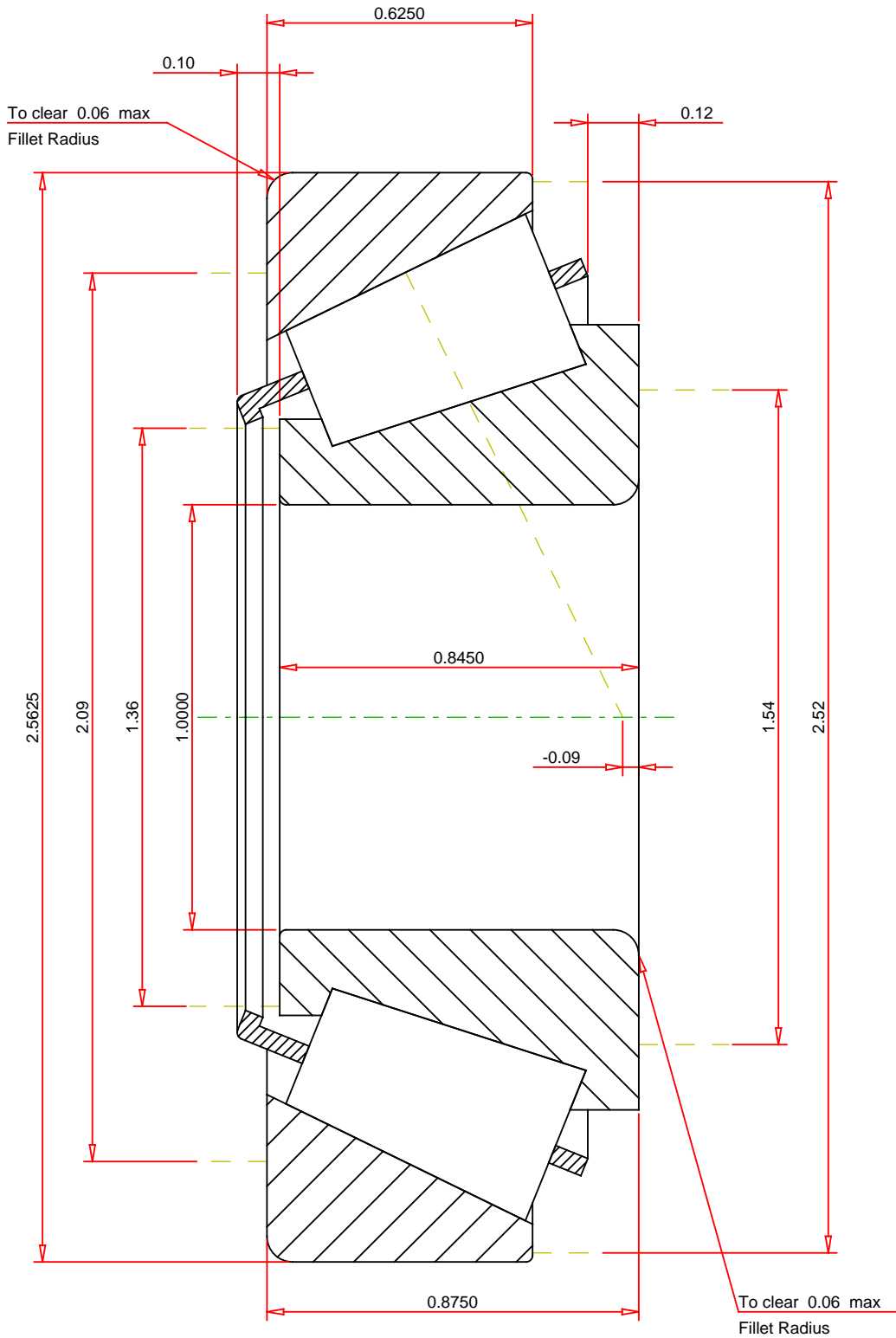
<sup>5</sup> Based on  $1 \times 10^6$  revolutions  $L_{10}$  life, for the ISO life calculation method.

<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	0.73
ISO Factor - Y	0.82
Bearing Weight	0.8 lb
Number of Rollers Per Row	14
Effective Center Location	-0.09 inch

**TIMKEN**®

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

**23100 - 23256**  
TS BEARING ASSEMBLY

K Factor	0.8
Dynamic Radial Rating - C90	14200 lbf
Dynamic Thrust Rating - Ca90	17700 lbf
Static Radial Rating - C0	55800 lbf
Dynamic Radial Rating - C1	54600 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**