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# Timken Part Number M249749 - M249710CD, Tapered Roller Bearings - TDO (Tapered Double Outer) Imperial

The configuration of the TDO provides a wide effective bearing spread, making it ideal for applications in which overturning moments are a significant load component. TDO bearings can be used in fixed positions or allowed to float in the housing bore.



Specifications | Dimensions | Abutment and Fillet Dimensions | Basic Load Ratings | Factors

## Specifications

| | |
|---|---|
| **Series** | M249700 |
| **Cone Part Number** | M249749 |
| **Cup Part Number** | M249710CD |
| **Design Units** | Imperial |
| **Bearing Weight** | 97.46 lb<br>44.205 Kg |
| **Cage Type** | Stamped Steel |
| **Ab - Cage-Cone Frontface Clearance** | 0.17 in<br>4.3 mm |

## Dimensions

| | |
|---|---|
| **d - Bore** | 10.0000 in<br>254.000 mm |
| **D - Cup Outer Diameter** | 14.1250 in<br>358.775 mm |
| **B - Cone Width** | 2.8125 in<br>71.438 mm |
| **C - Double Cup Width** | 4.6250 in<br>117.475 mm |
| **T - Bearing Width across Cones** | 5.9999 in<br>152.397 mm |

## Abutment and Fillet Dimensions

| | |
|---|---|
| **R - Cone Backface "To Clear" Radius[1]** | 0.14 in<br>3.600 mm |
| **r - Cup Frontface "To Clear" Radius[2]** | 0.06 in<br>1.5 mm |
| **db - Cone Backface Backing Diameter** | 10.79 in<br>274.10 mm |
| **Da - Cup Frontface Backing Diameter** | 13.52 in<br>343.41 mm |
| **Aa - Cage-Cone Backface Clearance** | 0.28 in<br>7.1 mm |

## Basic Load Ratings

| | |
|---|---|
| **C90 - Dynamic Radial Rating (One-Row, 90 million revolutions)[3]** | 53300 lbf<br>237000 N |
| **C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)[4]** | 358000 lbf<br>1590000 N |

| | |
|---|---|
| **C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)[5]** | 92800 lbf<br>413000 N |
| **$C_{a90}$ - Dynamic Thrust Rating (90 million revolutions)[6]** | 30300 lbf<br>135000 N |

## Factors

| | |
|---|---|
| **K - Factor[7]** | 1.76 |
| **e - ISO Factor[8]** | 0.7 |
| **Y1 - ISO Factor[9]** | 0.97<br>1.44 |
| **Y2 - ISO Factor[10]** | 1.44 |
| **Cg - Geometry Factor[11]** | 0.153 |

[1] These maximum fillet radii will be cleared by the bearing corners.

[2] These maximum fillet radii will be cleared by the bearing corners.

[3] Based on 90 x $10^6$ 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.

[4] Based on 1 x $10^6$ revolutions $L_{10}$ life, for the ISO life calculation method.

[5] Based on 90 x $10^6$ 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.

[6] Based on 90 x $10^6$ 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.

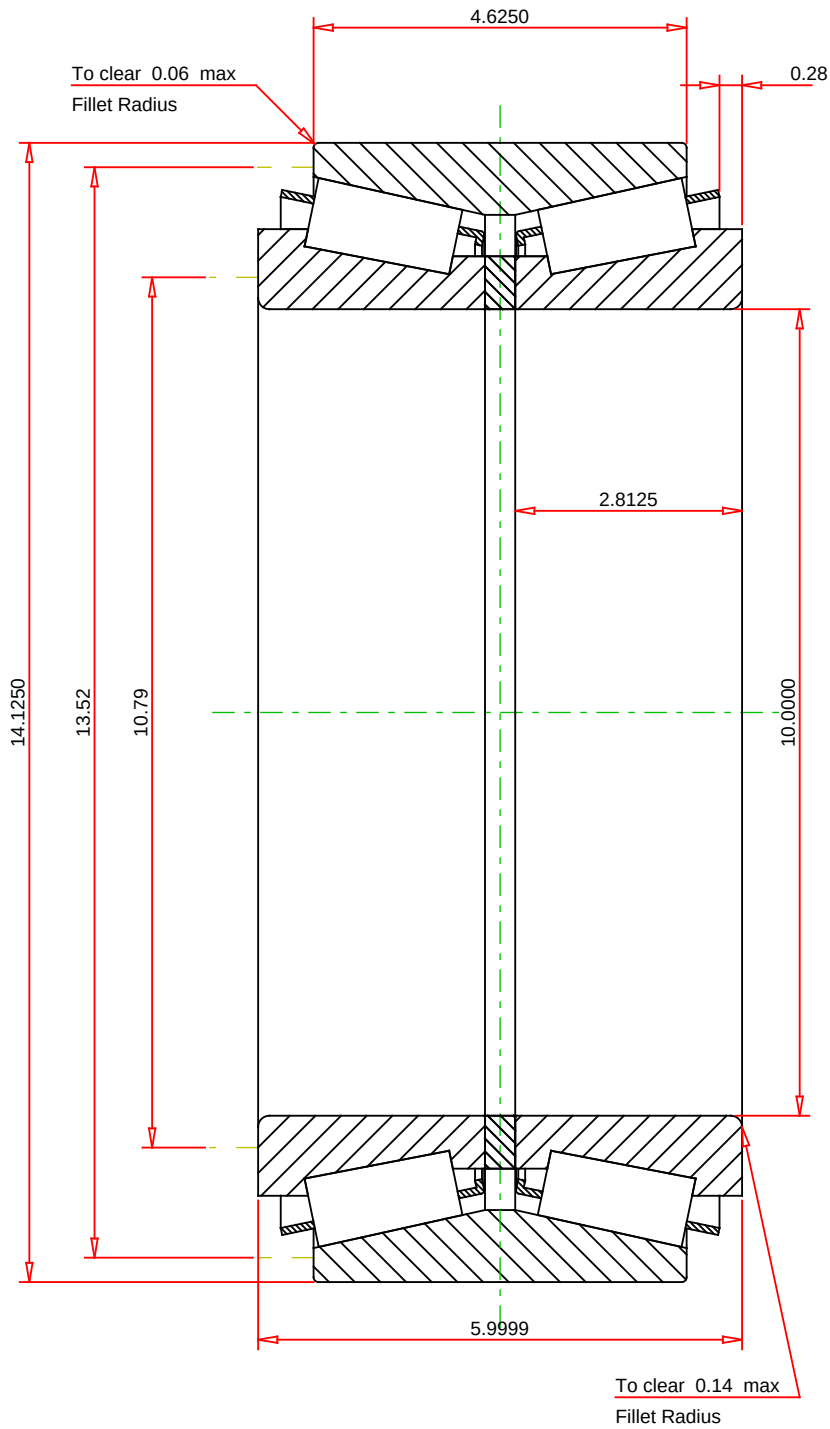
[7] These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

[8] These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

[9] These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

[10] These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

[11] Geometry constant for Lubrication Life Adjustment Factor a3l.




IMPERIAL UNITS

| | | |
|---|---|---|
| ISO Factor - e | 0.7 | |
| ISO Factor - Y1 | 0.97 | |
| ISO Factor - Y2 | 1.44 | |
| Bearing Weight | 97.46 | lb |
| Number of Rollers Per Row | 33 | |

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THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

# M249749 - M249710CD
TDO BEARING ASSEMBLY

| | | |
|---|---|---|
| K Factor | 1.76 | |
| Dynamic Radial Rating - C90 | 53300 | lbf |
| Dynamic Thrust Rating - Ca90 | 30300 | lbf |
| Dynamic Radial Rating - C90(2) | 92800 | lbf |
| Radial Rating - C1 | 358000 | 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.

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