TIMKEN

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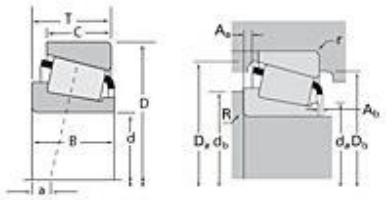
## Timken Part Number M12649 - M12610, Tapered Roller Bearings - TS (Tapered Single) Imperial

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** | M12649 |
| **Cup Part Number** | M12610 |
| **Design Units** | Imperial |
| **Bearing Weight** | 0.4 lb<br>0.200 Kg |
| **Cage Type** | Stamped Steel |

### Dimensions

| | |
|---|---|
| **d - Bore** | 0.8437 in<br>21.430 mm |
| **D - Cup Outer Diameter** | 1.9687 in<br>50.005 mm |

| | |
|---|---|
| **B - Cone Width** | 0.7200 in<br>18.288 mm |
| **C - Cup Width** | 0.5500 in<br>13.970 mm |
| **T - Bearing Width** | 0.6900 in<br>17.526 mm |

## Abutment and Fillet Dimensions

| | |
|---|---|
| **R - Cone Backface "To Clear" Radius[1]** | 0.050 in<br>1.270 mm |
| **r - Cup Backface "To Clear" Radius[2]** | 0.050 in<br>1.27 mm |
| **da - Cone Frontface Backing Diameter** | 1.08 in<br>27.43 mm |
| **db - Cone Backface Backing Diameter** | 1.16 in<br>29.46 mm |
| **Da - Cup Frontface Backing Diameter** | 1.83 in<br>46.48 mm |
| **Db - Cup Backface Backing Diameter** | 1.73 in<br>43.94 mm |
| **Ab - Cage-Cone Frontface Clearance** | 0.07 in<br>1.8 mm |
| **Aa - Cage-Cone Backface Clearance** | -0.01 in<br>-0.3 mm |
| **a - Effective Center Location[3]** | -0.25 in<br>-6.40 mm |

## Basic Load Ratings

| | |
|---|---|
| **C90 - Dynamic Radial Rating (90 million revolutions)[4]** | 3040 lbf<br>13500 N |
| **C1 - Dynamic Radial Rating (1 million revolutions)[5]** | 11700 lbf<br>52200 N |
| **C0 - Static Radial Rating** | 9780 lbf<br>43500 N |
| **$C_{a90}$ - Dynamic Thrust Rating (90 million revolutions)[6]** | 1450 lbf<br>6440 N |

## Factors

| | |
|---|---|
| **K - Factor[7]** | 2.1 |
| **e - ISO Factor[8]** | 0.28 |
| **Y - ISO Factor[9]** | 2.16 |
| **G1 - Heat Generation Factor (Roller-Raceway)** | 9.1 |
| **G2 - Heat Generation Factor (Rib-Roller End)** | 5.63 |
| **Cg - Geometry Factor** | 0.0479 |

[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] Negative value indicates effective center inside cone backface.
[4] 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.
[5] Based on 1 x $10^6$ revolutions $L_{10}$ life, for the ISO life calculation method.
[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.
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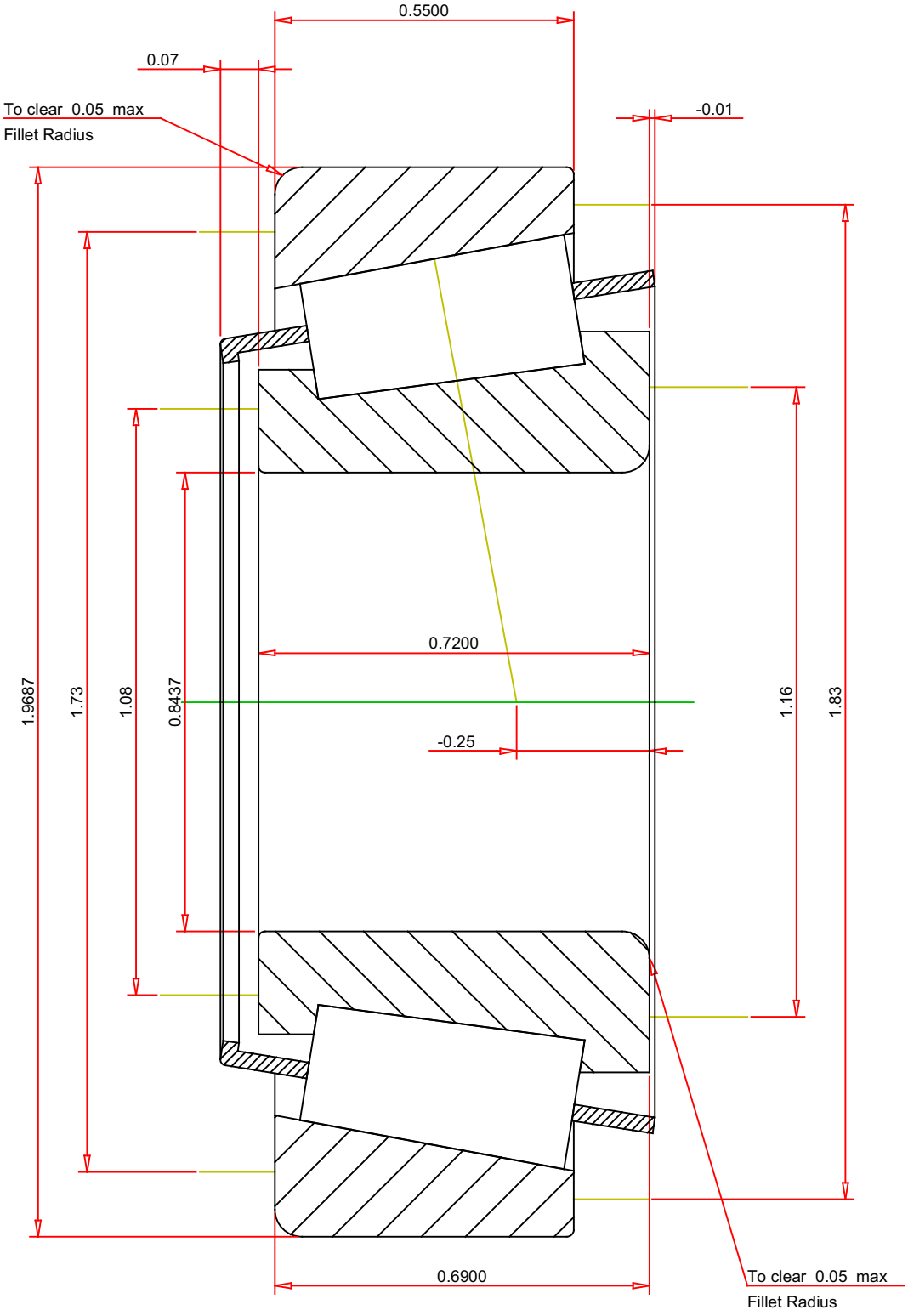


IMPERIAL UNITS

| | | |
|---|---|---|
| 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

M12649 - 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.

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