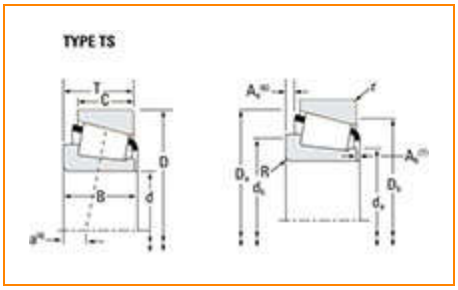
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# Part Number 07097 - 07196, Tapered Roller Bearings - TS (Tapered Single) Imperial

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** | 07000 |
| **Cone Part Number** | 07097 |
| **Cup Part Number** | 07196 |
| **Design Unit** | Inch |
| **Bearing Weight** | 0.3 lb<br>0.1 Kg |
| **Cage Material** | Stamped Steel |

## Dimensions

| | |
|---|---|
| **- Bore** | 0.9843 in<br>25.001 mm |

| | |
|---|---|
| **D - Cup Outer Diameter** | 1.9687 in<br>50.005 mm |
| **B - Cone Width** | 0.5614 in<br>14.260 mm |
| **C - Cup Width** | 0.3750 in<br>9.525 mm |
| **T - Bearing Width** | 0.5313 in<br>13.495 mm |

## Abutment and Fillet Dimensions

| | |
|---|---|
| **R - Cone Backface "To Clear" Radius[1]** | 0.06 in<br>1.5 mm |
| **r - Cup Backface "To Clear" Radius[2]** | 0.04 in<br>1.02 mm |
| **da - Cone Frontface Backing Diameter** | 1.14 in<br>29 mm |
| **db - Cone Backface Backing Diameter** | 1.22 in<br>31 mm |
| **Da - Cup Frontface Backing Diameter** | 1.87 in<br>47.50 mm |
| **Db - Cup Backface Backing Diameter** | 1.75 in<br>44.45 mm |
| **Ab - Cage-Cone Frontface Clearance** | 0.08 in<br>2 mm |
| **Aa - Cage-Cone Backface Clearance** | 0 in<br>0 mm |
| **a - Effective Center Location[3]** | -0.11 in<br>-2.8 mm |

## Basic Load Ratings

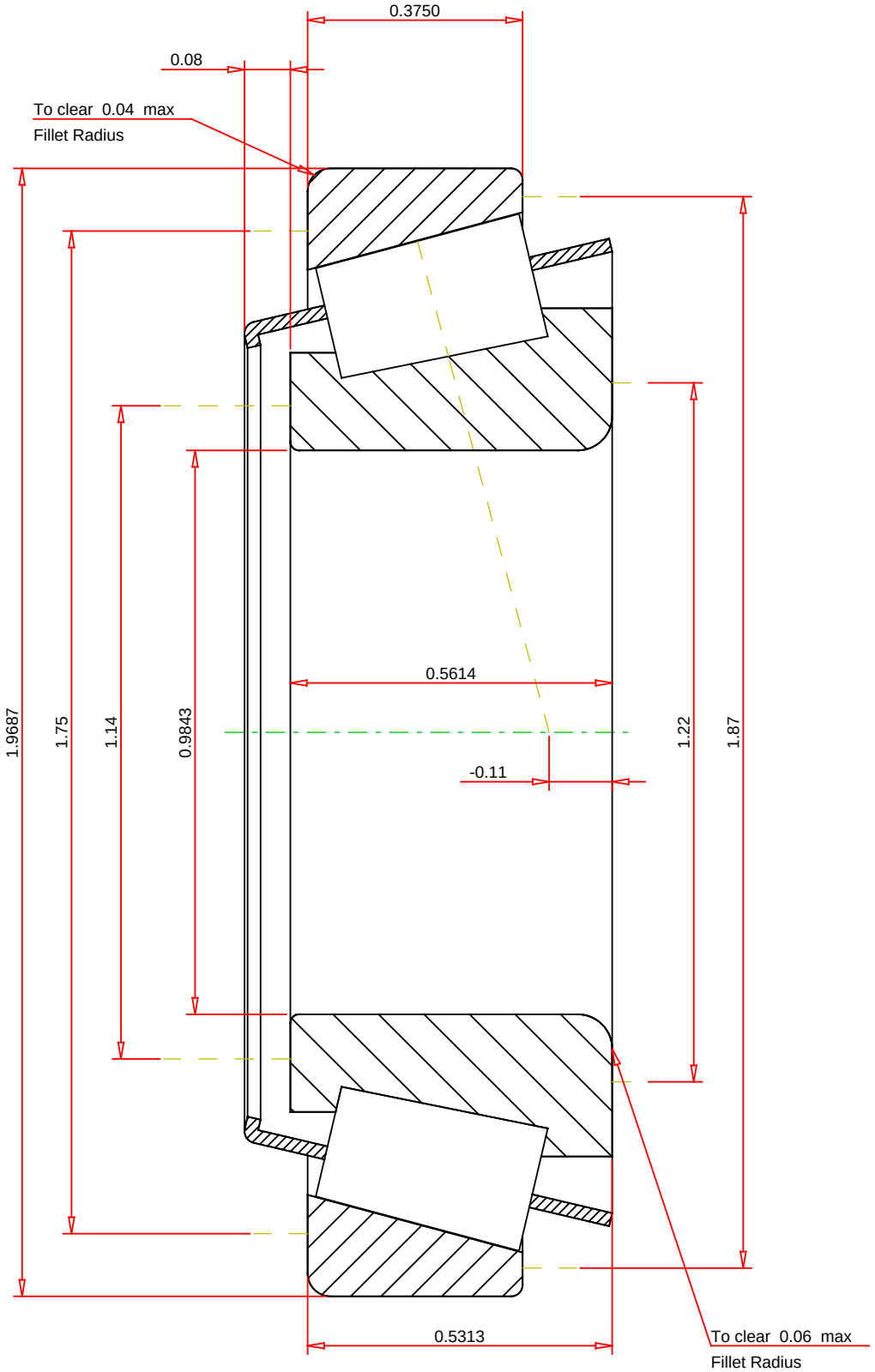
| | |
|---|---|
| **C90 - Dynamic Radial Rating (90 million revolutions)[4]** | 1700 lbf<br>7550 N |
| **C1 - Dynamic Radial Rating (1 million revolutions)[5]** | 6540 lbf<br>29100 N |
| **C0 - Static Radial Rating** | 6650 lbf<br>29600 N |
| **$C_{a90}$ - Dynamic Thrust Rating (90 million revolutions)[6]** | 1170 lbf<br>5190 N |

## Factors

| | |
|---|---|
| **K - Factor[7]** | 1.45 |
| **e - ISO Factor[8]** | 0.4 |
| **Y - ISO Factor[9]** | 1.49 |
| **G1 - Heat Generation Factor (Roller-Raceway)** | 7.6 |
| **G2 - Heat Generation Factor (Rib-Roller End)** | 7.1 |
| **Cg - Geometry Factor[10]** | 0.0509 |

[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 $90 \times 10^6$ revolutions $L_{10}$ life, for The Timken Company life calculation method. $C_{90}$ and $C_{a90}$ are radial and thrust values.
[5] Based on $1 \times 10^6$ revolutions $L_{10}$ life, for the ISO life calculation method.
[6] 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.
[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] Geometry constant for Lubrication Life Adjustment Factor a3l.




IMPERIAL UNITS

| | | |
|---|---|---|
| ISO Factor - e | 0.4 | |
| ISO Factor - Y | 1.49 | |
| Bearing Weight | 0.3 | lb |
| Number of Rollers Per Row | 16 | |
| Effective Center Location | -0.11 | inch |

TIMKEN

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

# 07097 - 07196

Tapered Roller Bearings - TS (Tapered Single)
Imperial

| | | |
|---|---|---|
| K Factor | 1.45 | |
| Dynamic Radial Rating - C90 | 1700 | lbf |
| Dynamic Thrust Rating - Ca90 | 1170 | lbf |
| Static Radial Rating - C0 | 6650 | lbf |
| Dynamic Radial Rating - C1 | 6540 | 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