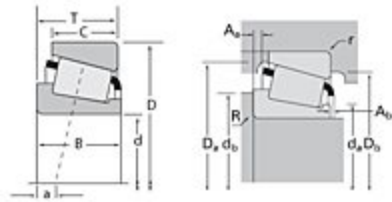


TIMKEN

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Timken Part Number 02474 - 02420, 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 | 02400 |
| Cone Part Number | 02474 |
| Cup Part Number | 02420 |
| Design Units | Imperial |
| Bearing Weight | 0.400 Kg 0.90 lb |
| Cage Type | Stamped Steel |

Dimensions

| | |
|-------------------------------|------------------------|
| d - Bore | 28.575 mm 1.1250 in |
| D - Cup Outer Diameter | 68.263 mm 2.6875 in |

| | |
|--------------------------|------------------------|
| B - Cone Width | 22.225 mm 0.8750 in |
| C - Cup Width | 17.463 mm 0.6875 in |
| T - Bearing Width | 22.225 mm 0.8750 in |

Abutment and Fillet Dimensions

| | |
|--|----------------------|
| R - Cone Backface "To Clear" Radius¹ | 0.760 mm 0.03 in |
| r - Cup Backface "To Clear" Radius² | 1.52 mm 0.06 in |
| da - Cone Frontface Backing Diameter | 36.07 mm 1.42 in |
| db - Cone Backface Backing Diameter | 36.58 mm 1.44 in |
| Da - Cup Frontface Backing Diameter | 63.00 mm 2.52 in |
| Db - Cup Backface Backing Diameter | 58.93 mm 2.32 in |
| Ab - Cage-Cone Frontface Clearance | 1.5 mm 0.06 in |
| Aa - Cage-Cone Backface Clearance | 0.8 mm 0.03 in |
| a - Effective Center Location³ | -5.10 mm -0.20 in |

Basic Load Ratings

| | |
|---|----------------------|
| C90 - Dynamic Radial Rating (90 million revolutions)⁴ | 16500 N 3720 lbf |
| C1 - Dynamic Radial Rating (1 million revolutions)⁵ | 63800 N 14300 lbf |
| C0 - Static Radial Rating | 70200 N 15800 lbf |
| C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁶ | 11800 N 2650 lbf |

Factors

| | |
|---|--------|
| K - Factor⁷ | 1.4 |
| e - ISO Factor⁸ | 0.42 |
| Y - ISO Factor⁹ | 1.44 |
| G1 - Heat Generation Factor (Roller-Raceway) | 17.5 |
| G2 - Heat Generation Factor (Rib-Roller End) | 8.48 |
| Cg - Geometry Factor | 0.0681 |

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 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

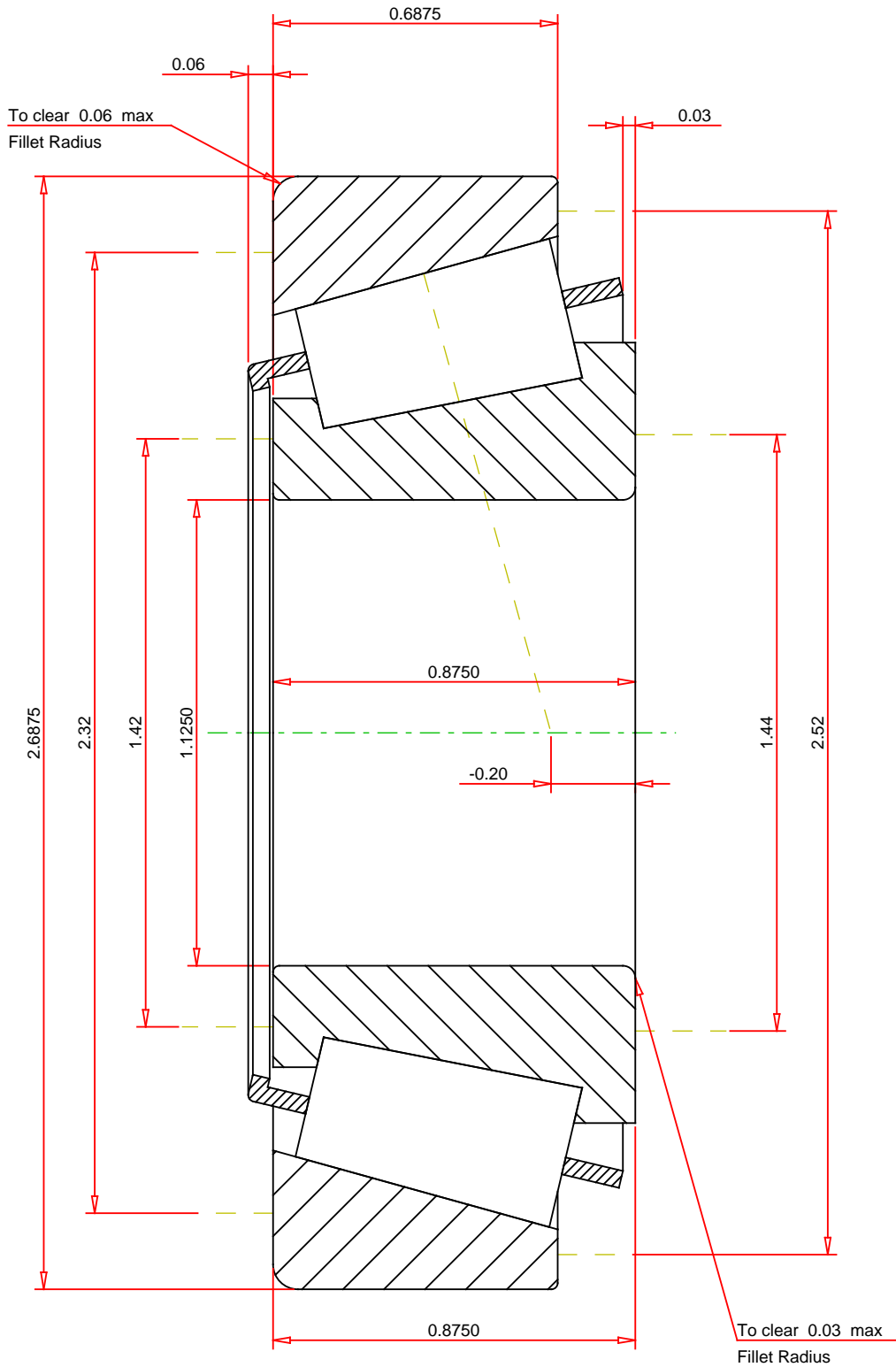
⁵ Based on 1×10^6 revolutions L_{10} life, for the ISO life calculation method.

⁶ Based on 90×10^6 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.



IMPERIAL UNITS

| | |
|---------------------------|-----------|
| ISO Factor - e | 0.42 |
| ISO Factor - Y | 1.44 |
| Bearing Weight | 0.9 lb |
| Number of Rollers Per Row | 16 |
| Effective Center Location | -0.2 inch |



**02474 - 02420
TS BEARING ASSEMBLY**

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

| | |
|------------------------------|-----------|
| K Factor | 1.4 |
| Dynamic Radial Rating - C90 | 16500 lbf |
| Dynamic Thrust Rating - Ca90 | 11800 lbf |
| Static Radial Rating - C0 | 70200 lbf |
| Dynamic Radial Rating - C1 | 63800 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