



The Timken Company

4500 Mt Pleasant St. NW

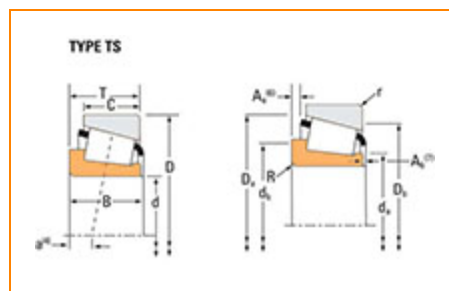
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Part Number 27689, Tapered Roller Bearings - Single Cones - Imperial

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 | 27600 |
| Cone Part Number | 27689 |
| Design Units | Imperial |
| Cage Type | Stamped Steel |
| C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)¹ | 45900 lbf 204000 N |
| C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)² | 11900 lbf 52900 N |

Dimensions

| | |
|-----------------------|------------------------|
| d - Bore | 3.2813 in 83.345 mm |
| B - Cone Width | 1.0000 in 25.400 mm |

Abutment and Fillet Dimensions

| | |
|--|---------------------|
| R - Cone Backface "To Clear" Radius³ | 0.03 in 0.800 mm |
| da - Cone Frontface Backing Diameter | 3.54 in 90 mm |
| db - Cone Backface Backing Diameter | 3.54 in 90 mm |
| Ab - Cage-Cone Frontface Clearance | 0.09 in 2.3 mm |
| Aa - Cage-Cone Backface Clearance | 0.05 in 1.3 mm |
| a - Effective Center Location⁴ | 0.02 in 0.5 mm |

Basic Load Ratings

| | |
|---|-----------------------|
| C90 - Dynamic Radial Rating (90 million revolutions)⁵ | 6830 lbf 30400 N |
| C1 - Dynamic Radial Rating (1 million revolutions)⁶ | 26300 lbf 117000 N |
| C0 - Static Radial Rating | 39900 lbf 178000 N |
| C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁷ | 4860 lbf 21600 N |

Factors

| | |
|---|-------|
| K - Factor⁸ | 1.4 |
| G1 - Heat Generation Factor (Roller-Raceway) | 98.2 |
| G2 - Heat Generation Factor (Rib-Roller End) | 41.8 |
| Cg - Geometry Factor⁹ | 0.120 |

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

² 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.

³ These maximum fillet radii will be cleared by the bearing corners.

⁴ Negative value indicates effective center inside cone backface.

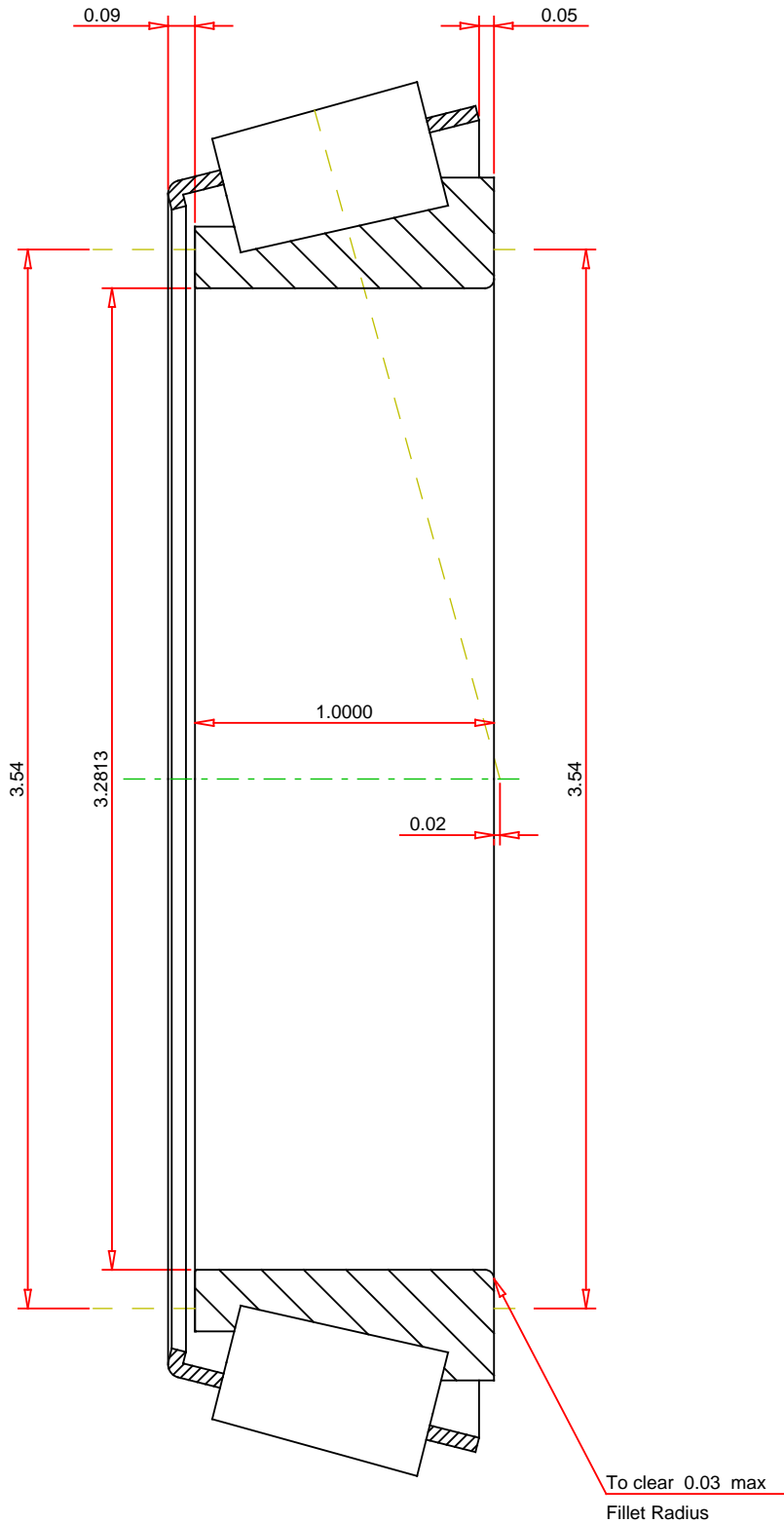
⁵ Based on 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

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

⁷ 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.

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

⁹ Geometry constant for Lubrication Life Adjustment Factor a_3 .



IMPERIAL UNITS

Number of Rollers Per Row 27

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

27689
SINGLE TAPERED CONE

| | |
|------------------------------|-----------|
| K Factor | 1.4 |
| Dynamic Radial Rating - C90 | 6830 lbf |
| Dynamic Thrust Rating - Ca90 | 4860 lbf |
| Dynamic Radial Rating - C1 | 26300 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