


The Timken Company

4500 Mt Pleasant St. NW

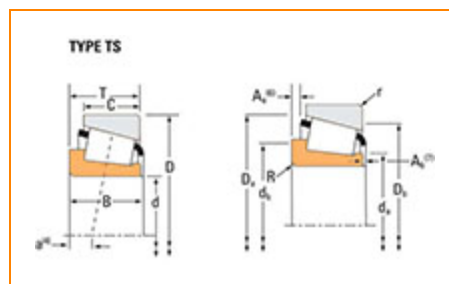
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Part Number 659, Tapered Roller Bearings - Single Cones - Imperial

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.



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Specifications

Series	655
Cone Part Number	659
Design Units	Imperial
Cage Type	Stamped Steel
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)¹	96700 lbf 430000 N
C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)²	25100 lbf 112000 N



Dimensions

d - Cone Bore	3 in 76.2 mm
B - Cone Width	1.6250 in 41.275 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius³	0.140 in 3.6 mm
da - Cone Frontface Backing Diameter	3.43 in 87 mm
db - Cone Backface Backing Diameter	3.66 in 93 mm
Ab - Cage-Cone Frontface Clearance	0.1 in 2.5 mm
Aa - Cage-Cone Backface Clearance	0.17 in 4.3 mm
a - Effective Center Location⁴	-0.31 in -7.9 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)⁵	14400 lbf 64000 N
C1 - Dynamic Radial Rating (1 million revolutions)⁶	55500 lbf 247000 N
C0 - Static Radial Rating	75300 lbf 335000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁷	10100 lbf 44800 N

Factors

K - Factor⁸	1.43
G1 - Heat Generation Factor (Roller-Raceway)	136.6
G2 - Heat Generation Factor (Rib-Roller End)	27.3
Cg - Geometry Factor⁹	0.0919

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.

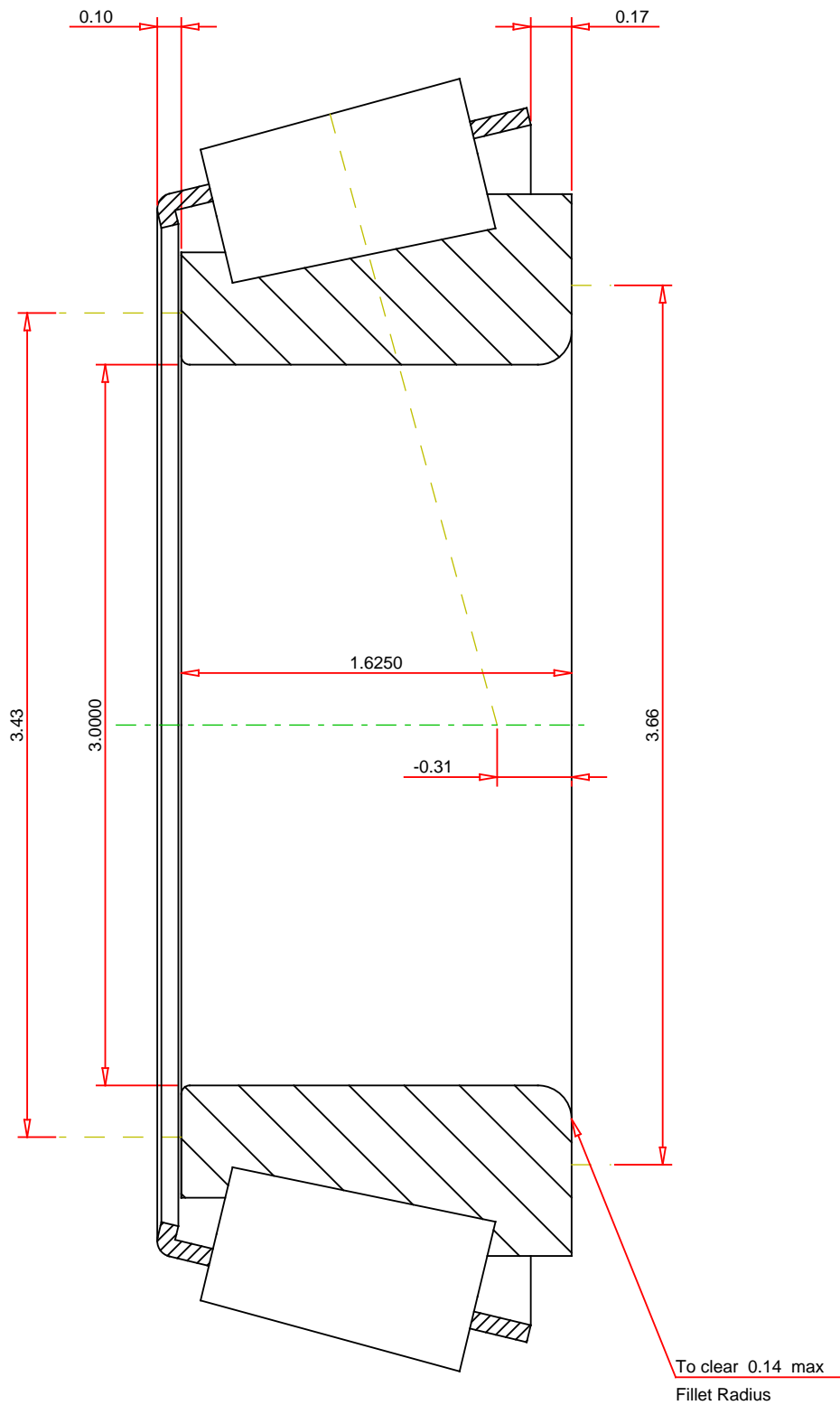
⁵ Based on 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

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 <
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