



The Timken Company

4500 Mt Pleasant St. NW

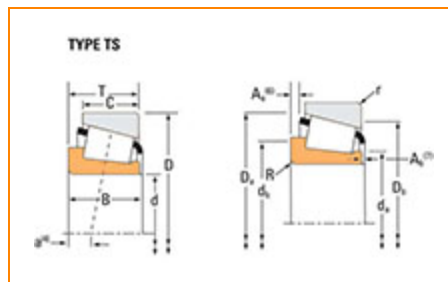
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Part Number 639, Tapered Roller Bearings - Single Cones - Imperial

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	635
Cone Part Number	639
Design Units	Imperial
Cage Type	Stamped Steel
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)¹	108000 lbf 481000 N
C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)²	28000 lbf 125000 N



Dimensions

d - Cone Bore	2 1/2 in 63.5 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	2.91 in 74 mm
db - Cone Backface Backing Diameter	3.19 in 81 mm
Ab - Cage-Cone Frontface Clearance	0.1 in 2.5 mm
Aa - Cage-Cone Backface Clearance	0.15 in 3.8 mm
a - Effective Center Location⁴	-0.44 in -11.2 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)⁵	16100 lbf 71600 N
C1 - Dynamic Radial Rating (1 million revolutions)⁶	62100 lbf 276000 N
C0 - Static Radial Rating	67000 lbf 298000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁷	9980 lbf 44400 N

Factors

K - Factor⁸	1.61
G1 - Heat Generation Factor (Roller-Raceway)	106.4
G2 - Heat Generation Factor (Rib-Roller End)	21
Cg - Geometry Factor⁹	0.0814

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.

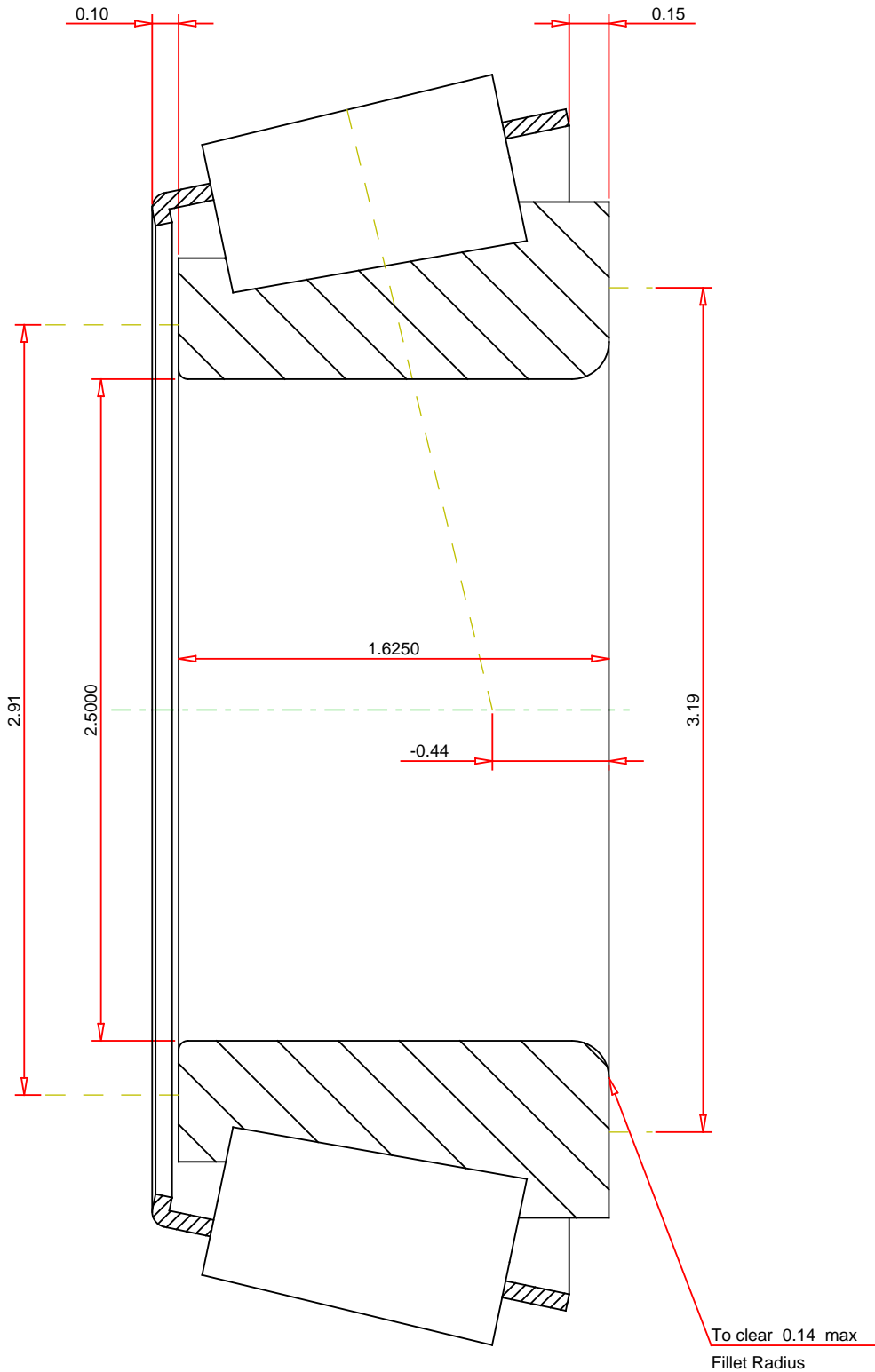
⁵ Based on 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

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

<div>Number of Rollers Per Row18</div>	<div><div>TIMKEN®</div><div>THE TIMKEN COMPANY</div><div>NORTH CANTON, OHIO USA</div></div>	<div><div>639</div><div>Tapered Roller Bearings - Single Cones - Imperial</div></div> <div><div><div>K Factor</div><div>Dynamic Radial Rating - C90</div><div>Dynamic Thrust Rating - Ca90</div><div>Dynamic Radial Rating - C1</div></div><div><div>1.61</div><div>16100</div><div>9980</div><div>62100</div></div><div><div>lbf</div><div>lbf</div><div>lbf</div><div>lbf</div></div></div>
<div>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.</div>		<div>FOR DISCUSSION ONLY</div>